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INSIDE DOPE

by GEORGE F. TAUBENECK

Story of the Week
Decentralization
Case History: Norge

Story of the Week

Here is one of those ridiculous flight-into-fancy stories that many people seem to enjoy. Personally, we don't care for it. But maybe others will. This is the pitch:

Two friends, between whom there had always existed the keenest spirit of cordial rivalry, were constantly putting forth every conceivable effort to outwit one another.

After months of laborious research, during which he had enlisted the aid of several of the foremost scientists of the day, one of these alert antagonists succeeded in inventing a slot machine into which a quarter could be inserted, and out would drop a new wife!

For this ingenious device, the inventor received world-wide acclaim and, practically, overnight, he became a millionaire.

This situation, of course, presented a stiff challenge to his competitor-friend. However, the latter resourceful fellow was equal to the occasion.

Not to be outdone, he perfected a larger machine, and superseded his friend as the hero of the day. Also, incidentally, he became a *multi*-millionaire. Into his machine a wife was dropped, and out came a shiny new quarter!

Decentralization

In recent years, a new development on the American industrial scene has made itself increasingly evident. Its ultimate effect on our way of life may be of tremendous benefit socially, culturally, and economically. That development is the trend toward decentralization of plant facilities for single-purpose production and high efficiency.

This movement is a reversal of an older trend which, when many of our major industries were still young, encouraged tremendous concentration of manufacturing operations in big cities. This earlier move, for example, resulted in the development of Detroit as the world's largest automobile producing center.

This newer decentralization trend, however, has led to a different phenomenon, viz: many of our best known automobiles are now being made in smaller cities throughout the nation.

Why? Efficiency is the answer. Decentralization brings about higher output, lower unit costs and ultimate lower prices to the consumer—and that's the sort of efficiency which may yet prove to be the salvation of our domestic economy. If our nation is to achieve the new highs in industrial capacity which so many predict is necessary, it seems likely that plant decentralization is one of the most important ways of achieving these goals.

The trend toward decentralization became noticeable just before the war, when a number of large manufacturers set up plants in outlying areas. The war checkmated this trend but, paradoxically, it helped it, too. With the end of the conflict manufacturers found many new plants, built for weapons output, available throughout the country. These facilities—most of which are for sale—have stimulated the movement from the cities to the towns.

The case of the Borg-Warner Corp. offers an excellent example of decentralization. Borg-Warner plants are situated in such places as New Castle, Ind.; Rockford, Ill.; Flint, Mich.; Effingham, Ill.; Windsor, Ont.; and Chattanooga, Tenn.; as well as in Detroit and Chicago. Each of these plants is a self-contained unit engaged in the exclusive manufac-

(Concluded on Page 15, Column 1)

Hotpoint Appliance Prices Rise; Higher Costs Are Blamed

CHICAGO—Price increases averaging about 7½% were put into effect last week by Hotpoint, Inc., on a number of appliances.

Higher labor and material costs made the changes necessary, according to company officials. They pointed out that material prices have gone up since the beginning of the year and that wage raises of more than 10 cents an hour have been given employes.

Hotpoint last week granted a 10 cents an hour increase to all employes, pay for six holidays, and adjustment raises for older workers.

Five refrigerators, a home freezer, four ranges, four dishwashers, and several water heaters were affected by the price increases. Prices were advanced $10 to $50 on the refrigerators, $30 on the one freezer now in production, $10 to $30 on the ranges, $20 and $30 on the dishwashers, and at least $10 on the water heaters.

No changes were made in the prices of laundry equipment and the disposal. A spokesman said the Model LW1 wringer-type washer was still marked $119.75 ($129.75 with pump), three portable rotary ironers $44.95, $64.95, and $124.75; an automatic flatplate presser $229.75; an automatic drier $229.75; and the disposal $124.50.

(Concluded on Page 32, Column 3)

NEWA Convention Opens In New Jersey

ATLANTIC CITY, N. J.—The 38th annual convention of the National Electrical Wholesalers Association will open Monday morning, May 5, at the Hotel Traymore here. It will continue through Thursday.

Based on the theme, "The Coming Electrical Age," the convention was planned to dramatize basic markets and activities developed to meet the coming sales challenge of the buyers' market.

One of the main addresses is to be given Monday afternoon by George E. Whitwell, vice president of the Philadelphia Electric Co. He will discuss "Your Opportunity in the Coming Electrical Age" before the general session sponsored by NEWA's appliance division.

Another important talk will be made by R. Stafford Edwards, president of the National Electrical Manufacturers Association. "Go All Electric" is the subject of his speech to be delivered Wednesday afternoon during the general session sponsored by the apparatus and supply division of NEWA.

In addition to Mr. Whitwell's talk, the Monday afternoon session will include reports and presentations of the sales promotion and sales train-

(Concluded on Page 32, Column 2)

Meat Industry Advised To Go 'Self-Service'

CHICAGO—The meat industry was advised last week to adopt pre-packaging of its products and to put retail meat stores into a "completely self-service operation."

Addressing the closing session of the National Independent Meat Packers Association convention, George P. Buente, president of the New York City advertising firm of the same name, asserted that "this is an era when the public is brand conscious to the Nth degree."

"The answer lies in pre-packaging of all meat products, both fresh and processed. The packers' opportunity lies in packing their own products under their own names, in their own trade-marked packages."

3,600 Attend First Western Industry Show

By C. Dale Mericle

LONG BEACH, Calif.—With 3,600 registered visitors, the first Western Refrigeration Industry Exposition exceeded all expectations of its sponsors, the California Association of the Refrigeration Service Engineers Society.

The show was held in the Municipal Auditorium here April 25, 26, and 27 concurrently with the first annual convention of the state RSES group. Some 500 members and guests registered for the RSES meetings, including members from all parts of California and several score from outside the state, even one from Alaska.

Many customers and users of refrigeration visited the exposition to view the varied products displayed by 42 exhibitors, and a considerable number of the public was attracted, also.

Another show will be held next year, probably the first week in May, it was decided by the board of directors of the California RSES. The location may be the San Francisco Bay area.

"I was amazed at the turnout from RSES members, contractors, and parts wholesalers," declared E. M. Flannery of Bush Mfg. Co., newly elected president of the Refrigeration Equipment Manufacturers Association, who came here expressly to evaluate the show.

"The show proved that there is a great need for education of the service engineers," he continued. "I noticed that in each booth that had a working model the engineers spent considerable time in going over actual operation of the units.

"I have spent considerable time with national and state officers of the RSES and find them to be the type that are interested in the overall success of the entire industry. We in Rema have the problem of working out some kind of mutual arrangement on educational work, either through expositions of this kind or in some other manner to further the educational policy of RSES.

"I'd particularly like to thank Bill Allison, president of the International RSES, and the new state president, J. Pat Riley, for the wonderful cooperation they've extended to me here in California."

The show opened on schedule Friday night at 7:30 p.m., despite many odds, including last-minute rumors that it had been canceled. W. W. Allison, head of both the international and California RSES groups, cut the ribbon at ceremonies broadcast over Radio Station KFOX.

Two educational sessions were con-

(Concluded on Page 4, Column 3)

More Cities Offer '10% Price Cut'; Many 'Big Ticket' Items Exempted

NEW YORK CITY—A rash of community price-cutting plans following the general pattern of the much-publicized "Newburyport Plan" of across-the-board price cuts of 10% in retail stores, thus far doesn't seem to have been extended to refrigerator and appliance prices.

It was said that generally speaking, stores were exempting from mark-downs those goods on which manufacturers have fixed national prices.

The Newburyport Plan, it was stated by Norman J. Randell, director, is not a "markdown sale" scheme.

"Price tags aren't being changed," he said. "It's just that the consumer is refunded 10% of the amount of his purchase."

Walter Morrow, president of the American Retail Federation, called the plan "uneconomic and unsound" until wholesale prices experience a similar drop.

Two hundred and fifty merchants in the borough of Queens here were planning to inaugurate May 1 the "Jackson Heights Plan."

This plan, which its sponsors maintain is sounder than the "Newburyport Plan," will scale price cuts according to the nature of the products and the amounts of the customary mark-ups. Food stores, for example, will make smaller price reductions than specialty shops or furniture houses.

Plans call for each store participating to display signs showing by what percentages prices were reduced.

Jack I. Straus, president of R. H. Macy & Co., said that the plan of an across-the-board price cut was impossible of adoption by department stores.

390,126 Household Models Shipped In Two Months

NEW YORK CITY—Eleven producers of household electric refrigerators reporting to the National Electrical Manufacturers Association reported world sales of 390,126 units for the months of January and February.

Sales billed by these manufacturers in January totaled 211,074 units, while February sales were 179,052 units.

Companies reporting included Admiral, Crosley, Coolerator, Hotpoint, Frigidaire, General Electric, Gibson, Kelvinator, Norge, Seeger, and Westinghouse. It is estimated that these firms produce well over 90% of the industry's total production of electric refrigerators.

The shipments were well over the figures (as reported by the U. S. Bureau of Census) for January and February of 1946, which were, respectively, 100,701 and 64,609.

However, they lag behind the Nema figures for January and February of 1941, which were 383,000 and 365,000 units, respectively.

Nema's report for the year 1946 shows total world shipments of 1,907,662 electric household refrigerators.

52,000 Ranges Were Shipped In February

WASHINGTON, D. C.—February shipments of standard type electric ranges totaled 52,000 units, valued at $5,700,000, according to U. S. Bureau of Census reports.

Shipments of apartment house type electric ranges were 9,000 units, with a value of $540,000.

271,338 Washer Sales In February Set Record

CHICAGO—Factory sales of washers hit an all-time high in February, with 271,338 units shipped. Shipments in January were 240,233.

The sales this February were nearly 75% greater than the factory sales of 155,546 units in February, 1941, last full prewar year.

Sales of ironers in February totaled 23,239 units.

Schaefer 'Pakaway' Freezer Price Slashed $40 to $140

MINNEAPOLIS—Harold L. Schaefer, president of Schaefer, Inc., has announced price reductions of from $40 to $140 per unit on all models of the "Pakaway" home freezer which the company makes.

G-E Ups Prices About 7% After Wage Increase

Refrigerator, Range, Freezer, Water Heater Prices Are Advanced

BRIDGEPORT, Conn. — General Electric Co. last week raised the prices of four household refrigerators, a home freezer, four ranges, three dishwashers, and 15 water heaters by an average of about 7%.

Charles E. Wilson, G-E president, said the raises were made necessary by wage increases of approximately 15 cents an hour that were granted recently to 125,000 employes.

The price of G-E's 6-cu. ft. refrigerator was increased $10. Three 8-cu ft. units went up $25, $30, and $40.

G-E's 8-cu. ft. home freezer now sells for $30 more. The 4-cu. ft. freezer is not in production, it was reported.

One range was increased in price by $10, two by $20, and one by $30. Dishwasher prices were boosted $15, $20, and $40, although no change was made in the price of the disposal.

Five water heaters were marked up $10, six rose $15, two $20, one $30, and one $40.

It is understood that no increases are contemplated on automatic electric blankets or heating pads.

The wage agreement between the company and the United Electrical Radio and Machine Workers (CIO) is retroactive to April 14. It is similar to settlements made with the

(Concluded on Page 32, Column 1)

Otter Becomes Philco General Sales Manager

PHILADELPHIA — Promotion of John M. Otter to the position of general sales manager of Philco Corp. has been announced by Thomas A. Kennally, vice president in charge of sales.

Mr. Otter has been a member of the Philco organization since 1926 and for the past three years he has been sales manager of the Radio Division.

He joined Philco in 1926 after graduating from Germantown High School in Philadelphia, and the next year was made district sales representative for northeastern Pennsylvania. He continued in that capacity until 1935, when he was named sales

(Concluded on Page 4, Column 5)

Housewares Buyers Play 'Waiting Game'

PHILADELPHIA—A marked tendency on the part of buyers to "watch and wait" was noticeable at the National Housewares Show, held April 27-May 2 in Convention Hall here.

While the show, sponsored by the National Housewares Manufacturers Association, attracted a large crowd, there was no marked rush to place orders, and better merchandise at lower prices, and short-term orders were topics of the day among the buyers.

There were few new items among the bigger appliances, and some manufacturers seemed to indicate that there wouldn't be much tooling up for new models as long as the demand holds for those now being produced.

Most of the manufacturers of the larger items were of the opinion that there would be very little chance of any immediate price cuts on these items.

Dayton Refrigeration Contractors, Service Engineers Plan Code Requiring Licensing, Permits, Inspections

DAYTON—Sixty Dayton refrigeration contractors, service engineers, and mechanics met recently to initiate action on a refrigeration code for Dayton, with a provision for licensing, permits, and inspections.

The meeting occurred at the Jamison Engineering Co. and was presided over by M. M. Jamison.

A special Code Committee was selected with L. O. Warner, Refrigeration Service Shop, Inc., as chairman.

The National Association of Refrigeration Contractors was represented by Gerald Weston, executive vice president, of Cleveland, and Ed S. Wright, first vice president, of Youngstown.

Both made talks, emphasizing the large amount of work already done on codes and licensing by NARC, the valuable information now on file, and the willingness to render all possible assistance to the Dayton group.

Mr. Wright passed around photographs of unsafe and unsanitary refrigeration equipment in cities without codes; and Mr. Weston stated that a NARC survey of 132 cities showed very few codes or licensing provisions.

A safety code, with licensing of both refrigeration contractors and mechanics, and absolutely fair, reasonable, and impartial in all respects, was advocated by those present.

Ex-G.I.'s Have Proven To Be Good Loan Risk, V.A. Figures Indicate

WASHINGTON, D. C. — Veterans Administration figures recently released reveal that of the 59,450 G.I. business loans approved some 960 have resulted in claims against the Administration.

Seven hundred thirty-two of these claims have been paid for a total of $680,000, which is subject to further recovery through liquidation of assets, officials pointed out. A total of 3,920 business loans have been completely paid up by the G.I.'s, the Administration stated.

The Veterans Administration pointed out that this rate of default is much higher than the rate on home loans, because of the short term characteristics of the business loan. In some cases the loans were for only one year. Thus far the Veterans Administration says that the ex-G.I. "has proved to be a good loan risk."

C. L. Frank Awarded May Corp. Contract

HOLLIS, N. Y.—Charles L. Frank, Inc., refrigeration sales and service firm here, has announced the signing of a contract with the D. W. May Corp., distributor, to service Coolerator mechanical refrigerators and freezers throughout this territory. The territory includes northern New Jersey, New York City, and several nearby counties.

NARC Reports Contract Charges Range from $10 to $60 per Unit

CLEVELAND—Examples of how much is currently being charged annually on maintenance contracts were reported recently by the National Association of Refrigeration Contractors in response to inquiries.

"One firm charges $12 per unit for household refrigerators," NARC said in its current news letter. "On commercial jobs (it charges), around $40 for ¼ hp. to around $60 for 1 hp. with one valve and $7.50 for each additional valve.

"Another firm has annual charges as follows: on household refrigerators, $15 for one, with $12 per unit for two, or $10 per unit for three or more. On commercial jobs, $25 per unit for ¼ and ⅓ sizes, $35 for ½ and ¾ sizes, $45 for 1 hp., and $60 for 1½ to 2 hp.

"Anything larger must be given special consideration in the light of what might happen due to age, use, condition, etc."

E. B. Derr To Follow Ross at Int. Harvester

CHICAGO—Appointment of E. B. Derr as product specialist on refrigeration to succeed H. N. Ross, who recently retired after 40 years with the company, has been announced by A. J. Peterson, manager, general line sales department, International Harvester Co. Mr. Derr previously was assistant to Mr. Ross.

H. L. Sawvell, formerly refrigeration district representative for the northwest district, has been made assistant to Mr. Derr.

Mr. Derr joined Harvester in 1934 at its Harrisburg branch, as salesman of dairy equipment. Before his transfer to refrigeration, he was assistant sales manager for the dairy equipment line.

Mr. Sawvell has been with the company since 1933. Before his assignment to refrigeration he was a member of the Watertown, S. D., Sioux City, and Minot, N. D. branch house organizations.

Manufacturers' Feb. Inventories Rise Above $21,000,000,000

WASHINGTON, D. C.—The Department of Commerce recently reported that manufacturers' inventories had risen to a total of more than $21,000,000,000 in February, but pointed out that this increase was less than the average for recent months. Officials attributed a portion of the rise to soaring prices.

Shipments for February were up 6%, totaling $13,000,000,000. This figure was 60% over total shipments for February, 1946.

General Appliance Sells G-E Commercial Refrigeration, Air Conditioning In Texas

WICHITA FALLS, Tex.—General Electric air conditioning and commercial refrigeration equipment will be distributed in 17 north Texas counties by the General Appliance Co., this city's newest appliance concern. Thomas R. Vague and Coyal F. Francis, owners have announced.

Mr. Vague will serve as general manager of the firm, while Mr. Francis, who also has an interest in the Household Appliance Co. here, will continue to manage that concern.

The General Appliance Co. will also serve as distributor for Koch commercial refrigerated cases in 24 north Texas counties, and will handle the Launderall, Paramount and Gemco air conditioners.

Jack Wagner Awarded Permit To Build Frozen Food Plant

LAGUNA BEACH, Calif.—Permit has been obtained from the Office of Housing Expediter, Division of Non-residential Construction, for construction of a frozen food plant on Laguna Canyon Rd., Laguna Beach, Calif., for Jack Wagner of 1173 Catalina Ave., that city. The one-story concrete tile building will cost $38,000.

TYPE "S" UNIT COOLER
The new PEERLESS Unit Coolers are designed for easy mounting, require small space for the work they do. Type "R" is for walk-in and reach-in coolers, Type "S" for beverage coolers, bars, display cases and reach-in boxes.
NEW TYPE "R" UNIT COOLER
Extreme adaptability and performance dependably superior at all times make PEERLESS products today's outstanding values in refrigeration. Non-ferrous construction, latest engineering improvements, and rigid standards in manufacture insure maintenance of required temperatures in your installations. PEERLESS products now available include Flash Plates, Flash Coolers, Unit Coolers, Ice Cube Makers, Fin Coils, Off Center Coils, Expansion Valves and Capacity Boosters. SPECIFY PEERLESS!
SOLD THROUGH LEADING REFRIGERATION SUPPLY WHOLESALERS
SNAP-OUT CUBE MAKER
NORMAL DUTY CUBE MAKER
HEAVY DUTY CUBE MAKER
Fast Delivery on PEERLESS Fasterfreeze Cube Makers! Left to right are the Snap-Out and Normal Duty Cube Makers and the New Type Heavy Duty Finned Cube Maker with decorative front. Fast freezing is achieved by continuous refrigerant tubes in each shelf. A large range of sizes and tray types answers the need for any installation requiring ice cubes in quantity frequently. Write for specifications.
PEERLESS of AMERICA, Inc.
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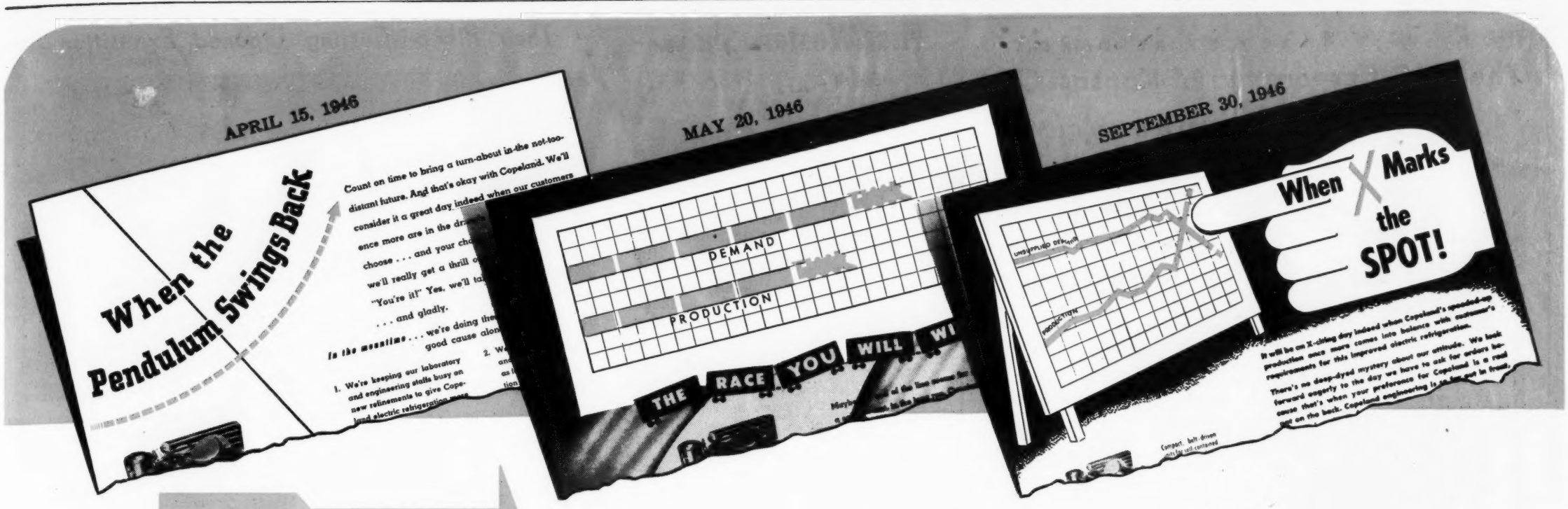


NOW SELLING'S BACK!

ORDER THESE 3 BIG-PROFIT COPELAND UNITS!

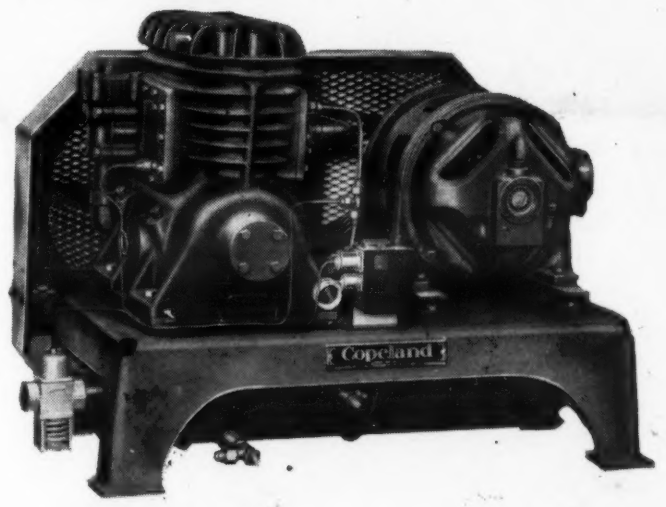
Now you can go after business hard and beat competition to the punch! Thanks to Copeland's production achievement, you can deliver what you sell . . . *and right away!* Three Copeland refrigeration units with a big, waiting market are available for immediate delivery. They're all top values that give you top profit. This is a time for aggressive action. Push these units to locker plants. Sell them for walk-in coolers, large food and dairy stores, air-conditioning installations. Your market will reveal a world of other logical prospects. These three units represent Copeland quality at its best. Stock up and sell up!

MODEL 503-W

5 H.P.

$1091.50 LIST

With Control — Less Starter

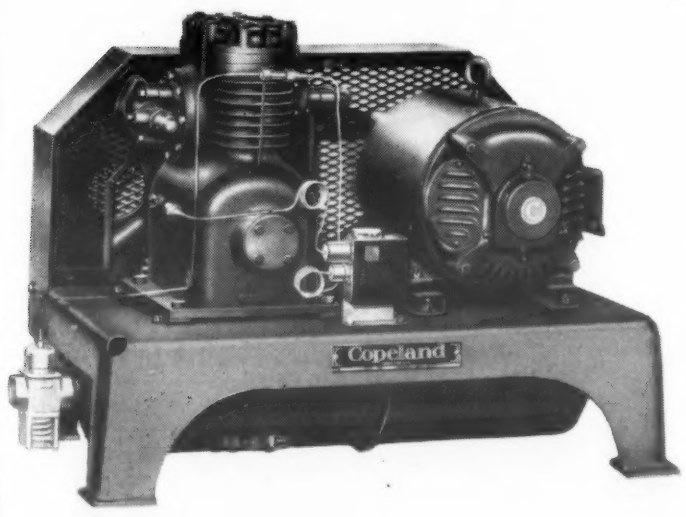


SPECIFICATIONS

Unit Length	36⅛"
Unit Depth	28"
Unit Height	24"
Shipping Weight	935#
Compressor Model	23
No. of Cylinders	3
Bore and Stroke	3¼" x 3¼"
Liquid Line Valve	½" F
Suction Line Valve	1⅜" S
Number of Belts	4
Section and Length	B-72"
Type of Condenser	Shell-Tube
Receiver Capacity	35# F-12

CAPACITY DATA

Freon-12 Models	Evaporating Temperature	Suction Pressure	B.T.U. Per Hour	
503-WFH 4½" Pulley 405 R.P.M.	40°F.	37.0 lbs.	75° IN 95° Out	64500
	35°F.	32.6 lbs.		60000
	30°F.	28.5 lbs.		55400
	25°F.	24.6 lbs.		50600
503-WFC 5" Pulley 455 R.P.M.	20°F.	21.1 lbs.	Water Temp. 90° Out	50000
	15°F.	17.7 lbs.		44800
	10°F.	14.7 lbs.		39700
	5°F.	11.9 lbs.		34600
503-WFL 5½" Pulley 505 R.P.M.	0°F	9.2 lbs.	Water In 75°	32700
	− 5°F.	6.8 lbs.		27700
	−10°F.	4.5 lbs.		23400
	−15°F.	2.4 lbs.		18500



MODEL 303-W

3 H.P.

$739.00 LIST

With Control — Less Starter

SPECIFICATIONS

Unit Length	36⅛"
Unit Depth	26¼"
Unit Height	21¾"
Shipping Weight	550#
Compressor Model	26
No. of Cylinders	2
Bore and Stroke	3¼" x 3"
Liquid Line Valve	⅜" F
Suction Line Valve	⅞" S
Number of Belts	3
Section and Length	B-65"
Type of Condenser	Shell-Tube
Receiver Capacity	45#

CAPACITY DATA

Freon-12 Models	Evaporating Temperature	Suction Pressure	B.T.U. Per Hour	
303-WFH 4⅛" Pulley 405 R.P.M.	40°F.	37.0 lbs.	75° In 95° Out	40000
	35°F.	32.6 lbs.		37200
	30°F.	28.5 lbs.		34300
	25°F.	24.6 lbs.		31400
303-WFC 4½" Pulley 450 R.P.M.	20°F.	21.1 lbs.	Water Temp. 90° Out	30600
	15°F.	17.7 lbs.		27300
	10°F.	14.7 lbs.		24200
	5°F.	11.9 lbs.		21100
303-WFL 5¼" Pulley 550 R.P.M.	0°F.	9.2 lbs.	Water In 75°	21900
	− 5 F.	6.8 lbs.		18550
	−10 F.	4.5 lbs.		15700
	−15 F.	2.4 lbs.		13300

SPECIFICATIONS

Unit Length	66"
Unit Depth	24½"
Unit Height	33¾"
Shipping Weight	1115#
Compressor Model	23
No. of Cylinders	3
Bore and Stroke	3¼" x 3¼"
Liquid Line Valve	⅝" F
Suction Line Valve	1⅜" S
Number of Belts	4
Section and Length	B-88"
Type of Condenser	Shell-Tube
Receiver Capacity	79# F-12

CAPACITY DATA

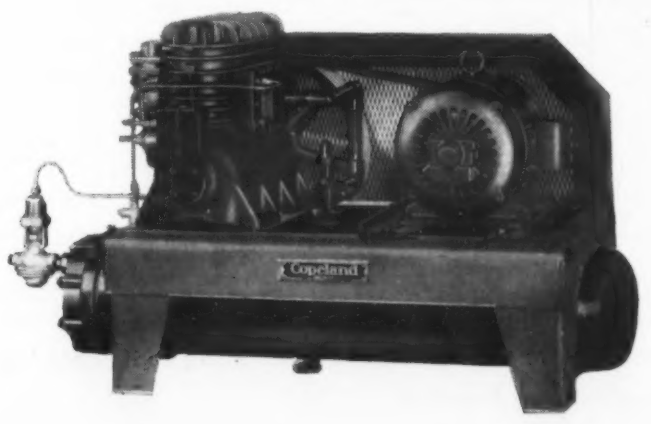
Freon-12 Model	Evaporating Temperature	Suction Pressure	B.T.U. Per Hour	
750-WFH 6½" Pulley 595 R.P.M.	40° F.	37.0 lbs.	75° In 95° Out	94700
	35° F.	32.6 lbs.		88100
	30° F.	28.5 lbs.		81400
	25° F.	24.6 lbs.		74500

MODEL 750-WFH

7½ H.P.

$1429.50 LIST

With Control — Less Starter



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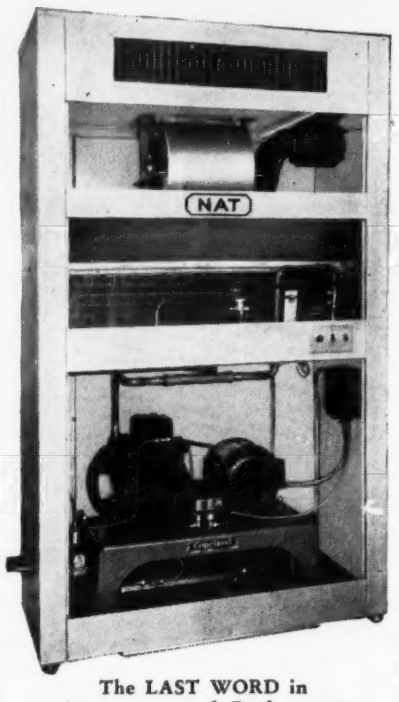
AFTER 17 YEARS OF RESEARCH

The NAT Corporation of Kansas City



The LAST WORD in Appearance and Performance

•

Finished Crackled Brown or Hammered Grey Baked Enamel

announces

THE NEW

NAT

(self contained)

AIR CONDITIONER

The Nat Air-conditioning Unit is the only one on the market so constructed as to be easily serviced.

The Answer to the Service-Man's Prayer

All working parts are accessible without having to tear down the cabinet. A saving of time and labor.

The NAT Unit comes in 3 sizes: 3.0, 4.2 and 5.4 Tons

Sold through exclusive dealers and distributors some territory still open — inquiries invited

The NAT *Corporation*

2710 McGee Trafficway • Phone HA. 1892 • KANSAS CITY, MISSOURI

The Nat Corporation also manufactures the NAT Suspended Gas-Fired Unit Heater

First Western Show--

(Concluded from Page 1, Column 3)

ducted by the state group at its convention. At one meeting, P. B. Reed, educational chairman of the international group outlined for members the ambitious educational program being undertaken by the society.

Dr. Walter O. Walker, director of research for Ansul Chemical Co., discussed the general topic of "Solids in Refrigeration Systems," at the Saturday morning session. He outlined in considerable detail the problems involved in formation of sludge and waxing of oil in systems, along with an extended discussion regarding the effects of moisture in systems.

Chief social event of the meeting was the dinner-dance held Saturday evening, attended by some 600 persons. In addition, there were several tours for the ladies and one to U. S. Navy drydocks here for the men.

Pat Riley, hard-working general chairman of the show and president of the Long Beach RSES chapter, was elected president of the state group during the convention here. Other officers include:

Rowland F. Cooke of San Francisco, re-elected first vice president; A. H. Brundage of Fresno, second vice president; Gerald S. Kennedy of Sacramento, re-elected secretary; M. R. Hanks of San Diego, re-elected treasurer; Vernon Denny of Pasadena, assistant secretary; Everett Brown of Compton, re-elected sergeant-at-arms; and Merle Soden of Anaheim, education director.

On the new board of directors are J. C. Rodgers of Los Angeles, Norman Overweser of Salinas, Frank A. Frazier of San Bernadino, W. E. Wharton of Oakland, Allyn W. Schoen of Sacramento, L. L. Kannon of Bakersfield, and Stillman H. Peck of Pomona.

Growth of the RSES in California during the past year received considerable emphasis from Mr. Allison, who announced that there are now 15 chapters in the state, compared with eight about a year ago.

The Hub chapter of Compton, Calif., received its charter at ceremonies held during the convention here.

Aiding Mr. Riley in putting on the show and convention were numerous committeemen, including M. R. Hanks, Merle Soden, Vernon Denny, Everett Brown, J. C. Rodgers, Garritt Van Ginkle, John Engle, Robert Schooler, Stewart Bell, Demi Voorhis, Al Haun.

Mrs. Riely, Mrs. Denny, and Mrs. Soden headed committees for registration and reception, also.

Their Ribbon-Cutting Opened Exposition

Participating in the "ribbon-cutting" ceremony to open the first Western Refrigeration Industry Exposition were (left to right): G. S. Robinson, California Refrigerator Co.; Neil Templin, Refrigeration contractors Association of Southern Calif.; H. T. McDermott, secretary of the Refrigeration Service Engineers Society; B. R. Glazer, Refrigeration Manufacturers Association of Southern California; W. W. Allison, International President of RSES; R. W. Noll, Refrigeration Contractors Association of Los Angeles; E. M. Flannery, Bush Mfg. Co., president of Refrigeration Equipment Manufacturers Association; Ralph N. Moore, president of National Association Practical Refrigerating Engineers No. 2 in Los Angeles; E. L. Nelson, chairman of the Los Angeles section of the American Society of Refrigerating Engineers; and J. Pat Riley, who is general chairman of the show.

Philco Names Otter--

(Concluded from Page 1, Column 5)

manager of the Philadelphia branch of Philco Distributors, Inc.

In 1937 he was appointed manager of the Detroit office, and was then made general manager of the Chicago branch of Philco Distributors, Inc. Two years later he was named sales manager for the Middle West, and in 1944 was made sales manager of the radio division with headquarters in Philadelphia, when the company's selling organization was being enlarged and strengthened.

Indiana 'Corner Store' Opens

CRAWFORDSVILLE, Ind. — The Corner Store has been opened here at Main and Green Sts., featuring a variety of electrical appliances and table lamps.

NEMA Household Refrigerator Sales for Year 1946

Electric Household Refrigerators
(Complete Refrigerators Only)

Total Domestic and Foreign Sales by Sizes—In Units
Reports were received from 11 companies

Household Refrigerators—Complete (Lacquer and Porcelain Exterior Cabinets) (Advertised Sizes)	December	Total Year
1—Less than 4 cu. ft.	229	510
2—4 cu. ft.	1,457	49,961
3—5 cu. ft.	1	10
4—6 cu. ft.	6,611	127,281
5—7 cu. ft.	178,621	1,573,958
6—8 cu. ft.	7,729	19,409
7—9, 10, 11 & 12 cu. ft.	19,141	136,518
8—13 cu. ft. and up	.....	15
9—Total Complete Refrigerators (Lacquer & Porcelain)	**213,789**	**1,907,662**

Participating companies: Admiral Corp.; Crosley Div., Aviation Corp.; The Coolerator Co.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Inc.; Nash-Kelvinator Corp.; Norge Div., Borg-Warner Corp.; Seeger Refrigerator Co.; Westinghouse Electric Corp.

"I like its easy accessibility."

Refrigeration engineers who have examined and watched the performance of the new Mills Direct Drive Compressor tell us — enthusiastically — that it is exceptionally easy to maintain and repair. This is because, as our own engineers believed when they designed it, each assembly and each part are readily accessible.

Small and compact though it is, the Direct Drive has all of the service advantages of open type units. No larger than comparably rated hermetic compressors, it has no enclosing hood to make factory repair essential. Instead, it can be put back into operation "on location."

Its light weight, small size, and high standards of efficiency and performance are other factors contributing to its growing acceptance throughout the industry.

MILLS
Direct Drive
COMPRESSOR

First post-war addition to a distinguished family of air- and water-cooled condensing units

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Rural Family with Freezer Has Greater Need of Added Storage, Survey Shows

Editor's Note: The following is excerpted from a summary of a comprehensive survey of the market for home freezers and walk-in coolers in rural areas compiled by the market research division of Owens-Corning Fiberglas Corp. of Toledo, Ohio.

Seventy-five per cent of the electrified farms in the United States, or 50% of all farms, will have either a home freezer or locker within about 10 years, the survey revealed after a study of other surveys made by national publications, agricultural associations and colleges, and manufacturers' associations.

The initial demand for freezers should average about 6% of the rural families, or about 360,000 units per year, in 1947, 1948, and 1949, it predicted. After 1950, it added, the initial demand will lessen and, unless prices are reduced considerably, sales will decline to about 5% of the rural families per year thereafter.

High income farms will have made their purchases and, in order to reach the majority of rural families, freezer prices should not exceed about $400 for a 25-cu. ft. capacity freezer, the survey concluded.

Current estimates indicate that the rural family will require 6 cu. ft. of freezer space per person, the survey said. Based on the typical rural family size of four persons, it is evident that the most practical and popular freezer size is about 25 cu. ft. of food storage space, it concluded.

The survey further concluded that the purchase of home freezers by rural families will not eliminate the need for a community locker plant.

It pointed to the experience of Tompkins county, N. Y., where nearly 10% of the rural families had purchased home freezers in less than a year's time. Yet 80% of the purchasers retained their community locker space.

The 20% who gave up their locker space have since expressed their regrets, the survey said. Reasons given were that their freezers were too small and that they now needed, more than before, the processing and other services offered by the locker plant.

The "Mother Zero" locker plant in Ithaca, N. Y. is said to have had an increase of about 50% in demand for processing and services since home freezers were introduced into that area.

A recent poll among locker operators themselves has shown that over 80% of them intend to offer home freezers for sale to their customers, the survey declared.

The use of a freezer on the farm eliminates frequent trips to the community locker plant with small quantities of produce, it points out. The freezer enables the rural family to store as much as a year's supply of food at home, easily available at any time. At the same time, it works hand in hand with the community locker plant for processing meat, fowl, and large quantities of fruits and vegetables.

The largest demand for freezers and lockers is in the high income corn belt and dairy states, South and West ranch states, and western areas of the country, the survey noted. Demand among the relatively low income farms of the South and Southeast is very low, the report indicated.

Because the survey covers both low and high income areas, its estimate of overall demand may appear low, it pointed out.

Experiments and surveys indicate that the optimum insulation thickness for a rural home freezer is 6 in., the survey asserted. Less insulation results in longer compressor running cycles and greater electricity consumption, it explained.

Thicker insulation, although admittedly more efficient, results in freezers of large size which are difficult to pass through a standard door frame. Such freezers also present hardships for the typical housewife when she reaches into rear and bottom corners.

Present manufacturers of freezers are standardizing on 4 and 6 in. insulation thicknesses, it stated.

Many experts predict that within a few years, freezers will not be considered a luxury, but, particularly on farms, will be regarded as a necessity and will receive as wide acceptance as electric refrigerators at present, the survey declared.

Such wide public acceptance will require time, experience, lower prices, and extensive educational programs, it concluded.

The demand for walk-in two or three-temperature lockers is slight when compared with that of home freezers, due mainly to the relatively high initial cost of such lockers, the survey averred.

However, among very high income farms, ranches, and those which process foods on a semi-commercial basis, lockers are in accepted usage, it said.

As more are sold in various communities neighbors see them and become more interested in their operation. And as more rural families gain experience in frozen food processing, uses, and economies, the demand for lockers will grow, the survey reasoned.

The demand for lockers will be greatest:

a. In milk producing states where the chill room of the locker may be used as a milk cooler,

b. In western states where there are high income cattle ranches which process their own meat,

c. And in areas where community locker plants are too distant.

In some states, the demand for such equipment may be as high as 5% of the farms. In others, in the South and Midwest, demand may fall well below ½% of the farms.

On a nationwide basis, estimates of walk-in locker sales will average about ¾% of the farms per year.

About a quarter to a third of a walk-in locker is usually used for a quick freeze cabinet at about 0° F., it asserted. The remaining capacity, at 35° F. to 40° F. is used to chill fresh meat prior to freezing and storage of butter, milk, vegetables, fruits, etc.

On large farms and ranches operated on a semi-commercial basis, where foods are frequently processed to be sold, lockers may be as large as 500 to 600 cu. ft. capacity, it noted.

However, to meet the requirements of an average size farm which might use a locker, 200-cu. ft. capacity should be satisfactory. Of this space, a freezer compartment would require 50 to 75 cu. ft. and a chill room the remaining 125 to 150 cu. ft., the survey estimated.

The following charts show the results of questions asked the heads of agricultural engineering departments in state universities throughout the United States.

'47 MARKET BREAKDOWN

1. *Providing materials and equipment are available, what percentage of the rural families in your state will be in the market for the following cold storage families in 1947?*

Zero or freeze cabinets	10.8%
Milk coolers	7.0
Walk-in lockers	3.1
Chill room only	2.3

DESIRED FREEZER SIZE

2. *Please check in order of importance, the desired capacities of zero or freezer cabinets.*

25 to 40 cu. ft.	35.67%
Under 25 cu. ft.	29.96
40 to 60 cu. ft.	22.39
Over 60 cu. ft.	11.98

DESIRED WALK-IN SIZE

3. *Please check, in order of importance, the desired capacities of walk-in lockers.*

100 to 200 cu. ft.	33.02%
200 to 300 cu. ft.	30.48
Over 300 cu. ft.	18.73
Under 100 cu. ft.	17.77

MOST POPULAR PRICES

4. *What proportion of the rural families in your state expect to purchase this equipment within each of the following price classes?*

A. *Zero or freeze cabinets*

Under $100	5.35%
$100 to $300	35.85
$300 to $500	42.26
$500 to $700	13.73
Over $700	2.82

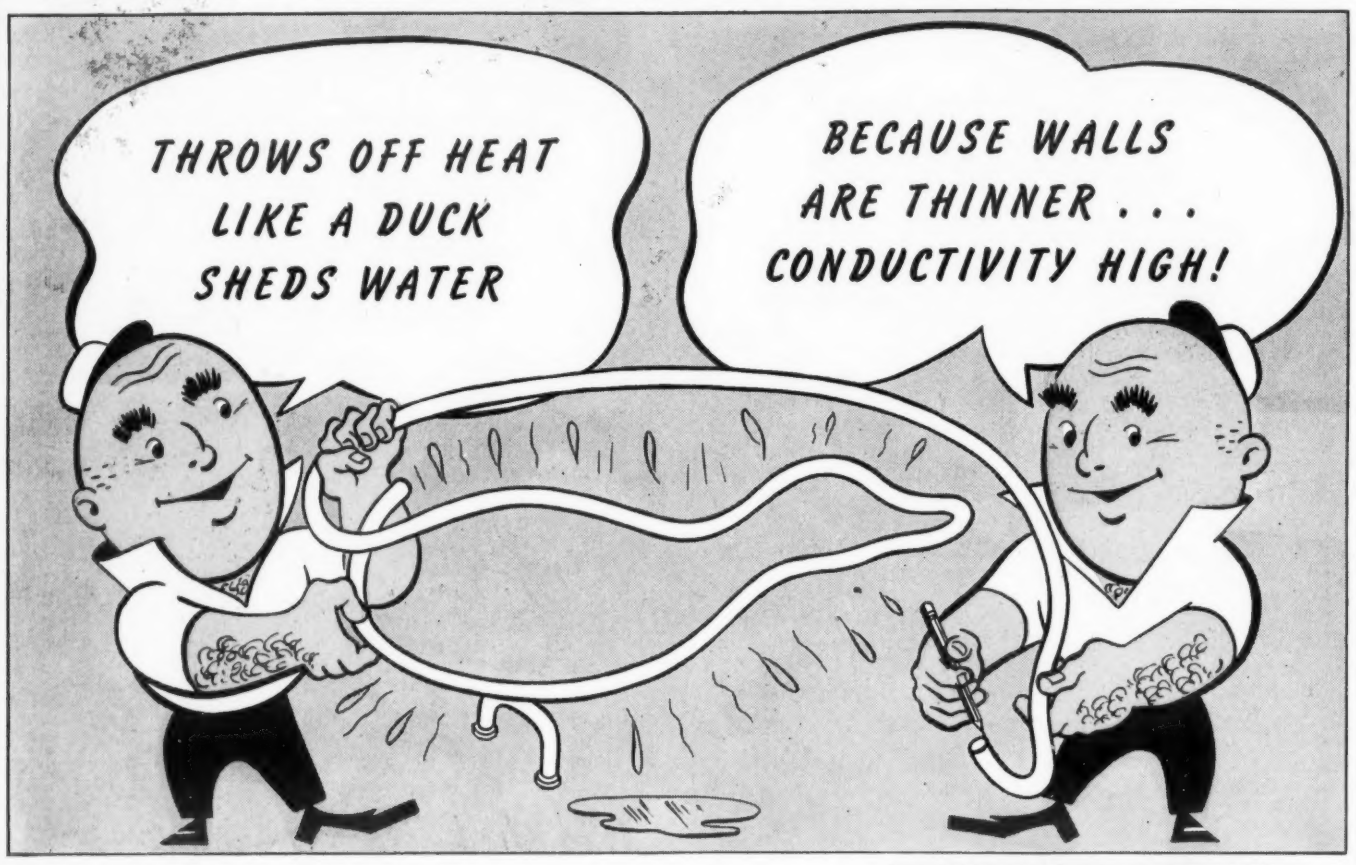
B. *Walk-in lockers*

Under $300	6.35%
$300 to $600	27.47
$600 to $900	32.19
$900 to $1,200	25.49
Over $1,200	8.50

METHODS OF PURCHASE

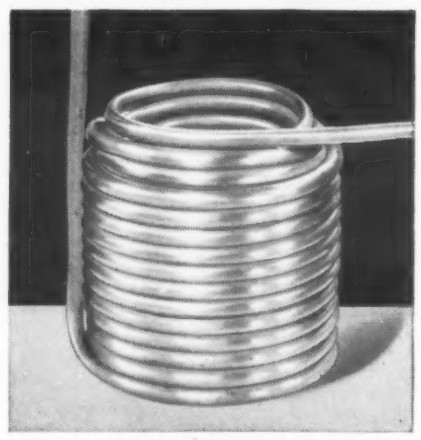
5. *Assuming manufactured units as well as materials are available, please check, in order of importance, the preference of farmers and rural non-farmers regarding methods of purchasing their home freezers and walk-in lockers.*

	Freezers	Lockers
To buy completed plug-in units from a local farm equipment or supply dealer	31.77%	18.98%
To purchase plug-in units from a large mail order house	26.87	15.35
To purchase prefabricated sections and build the unit themselves	15.56	20.89
To hire a local dealer or contractor to build the unit on location in accordance with individual specifications	13.22	25.37
To obtain drawings and to purchase basic materials to build the freezer themselves	12.58	19.41



Why Bundyweld Nickel makes better beverage Tubing

Liquids cool in a hurry with Bundyweld Nickel Tubing. Here's why: Unique construction means extra strength, permitting thinner walls . . . high heat conductivity is inherent in nickel.



Beer coils like the one pictured here aptly illustrate the successful application of Bundyweld Nickel Tubing in the beverage field.

6 Other Vital Points to Weigh

1. Costs no more than old types of tubing for beer and carbonated water . . . yet outlasts them all and defies pitting, corrosion, brines, electrolytic or galvanic action.

2. Resists denting, collapsing or bursting . . . because of Bundyweld double wall construction plus inherent strength in Nickel.

3. Protects purity . . . promotes hygienic cleanliness as attested by world-wide use of Nickel in beverage and food processing equipment.

4. Easy to Clean . . . any ordinary cleaning compounds or fluids keep Nickel tubing fresh and sanitary.

5. Easy to Form . . . coils more easily than other high-strength materials, and forms readily to any contour wanted in running leader lines through conduits. Various types of standard and special fittings can be used.

6. Ready for you today . . . in coils up to 100 feet, in standard diameters.

Write today for FREE NEW BOOKLET—"How A Double Wall Gave a New Twist to Tubing" . . . gives you all the facts about Bundyweld Nickel Tubing. Distributors listed below will mail you the booklet and any other information about Bundyweld Monel and Nickel Tubing. *Bundy Tubing Company, Detroit 14, Michigan.*

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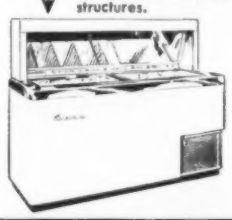
Farm, Home and Commercial Freezers, 8 to 22 cu. ft.

Commercial Display Freezers with illuminated superstructures.



Factory fabrication and sectional design make it easy for us to deliver exactly what your customer wants in a Walk-In Cooler! Sizes from 6x6 and up—doors, reach-in windows, shelves, rails, and other equipment as specified. In wood or metal clad with baked enamel finish and chrome trim, as illustrated. Easily assembled on the job—easy to enlarge with extra sections at any time. "Customer-Bilt" walk-ins are sure to please . . . on the next job "sell AMERICAN first!"

DEALERS! Write for colorful literature and prices on AMERICAN products.

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Fishermen who read Field & Stream catch millions of fresh and salt water fish each year. Their only way to keep their surplus catch "fresh" is to freeze it. Ask any of your sportsman friends—learn how many of them need and want home freezers for their own and their families' food storage needs.

Your No. 1 Market for Home Freezers

The key sportsmen who read Field & Stream

TO SELL HOME FREEZERS TO YOUR No. 1 MARKET USE...

Here's how you can get the story of your home freezers to your logical No. 1 market.

The audience covered by Field & Stream are key sportsmen who need home freezers and have the money and the desire to buy.

The "buy-ability" of these key sportsmen has made Field & Stream "America's Number One Sportsman's Magazine." It can make them your No. 1 market for home freezers, too! Ask any of the many advertisers who make Field & Stream a "must" on their advertising lists. They'll tell you it *produces sales!*

Sell home freezers to these selected prospects quickly, inexpensively and profitably through Field & Stream—*the magazine in which more advertisers used more space in 1946 than in any other outdoor magazine!*

Field & Stream

AMERICA'S NUMBER ONE SPORTSMAN'S MAGAZINE

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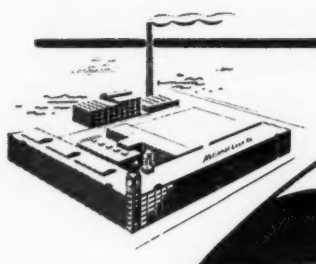
REFRIGERATOR HARDWARE
for domestic, commercial and low temperature cabinets



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"THRU THE DOOR" HARDWARE

EDGE MOUNTED HARDWARE

PLASTICS

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NATIONAL LOCK COMPANY
Refrigerator Hardware Division
ROCKFORD, ILLINOIS

Pacific Names Weber National Service Manager

CLEVELAND — Appointment of Alfred E. Weber as national service manager of the Pacific Mfg. Corp., of Cleveland, manufacturer of "packaged" air conditioning units, is announced by S. C. May, vice president and general sales manager.

Mr. Weber, who has been identified with refrigeration and air conditioning for more than 20 years, was formerly with the Worthington Pump & Machinery Corp., of Holyoke, Mass. in an engineering capacity, the Gard-Aire Products Division of the Gardner Forster Co., Inc., of New York City, as chief engineer, and other companies in the refrigeration field.

Lynch Nets $295,561 Profit

TOLEDO—Lynch Corp. here has reported a net profit of $295,561 for the quarter ended March 31, compared to $193,327 for the same period in 1946.

Firm Sells Frozen Foods, Refrigeration Equipment

POTSDAM, N. Y.—The Potsdam Community Ice Cream Co. has been incorporated with offices at 14½ Pine St. It is authorized to engage in the "manufacture and sale at wholesale and retail of ice, ice cream, dairy products, frozen foods, refrigeration equipment, and other household or commercial equipment." Incorporators are Harry A. Bullard, Theodore A. Guilmette, and Edward H. Stebner.

Tests Show Prepackaged Meats Will Last 1-7 Days In Open-Type Self-Serve Cases

POMONA, Calif. — Before going into extensive sales of prepackaged meats in open-type refrigerated self-service cases, the Valley Village Supermarket chain here has run exhaustive tests on this type of selling.

Six months were spent in developing attractive packaging, choosing the most effective type of open refrigerators, and most important, testing the "shelf life" of various types of fresh meat on a self-service basis.

Now prepackaging 90% of its meats to be sold through Hussmann-Ligonier open-type refrigerated cases, the Valley Village tests have proven that the length of time which meats will remain in attractive, salable condition at temperatures found in open refrigerators varies from one to seven days.

From this testing, during which three samples of each type of meat were checked, Valley Village stores have drawn up the following "shelf life chart" to guide butchers in planning displays and sales.

Shelf life expectancy for each type of meat is given below.

* * *

Table Giving 'Shelf Life' of Prepackaged Meats

	Days
Beef	
Top sirloin roast	2
Face of rump roast	2
Chuck roll roast	2
Prime ribs roast	3
Pot roast	2
Club roast	2
Sirloin steak	1
Rump steak	1
Club steak	1
Tender knived steak	1
Hamburger	1
Beef for stewing	2
Shin bone	2
Short ribs of beef	2
Lamb	
Legs	4
Kidney chops	3
Rib chops	3
Stewing meat	3
Forequarter chops	4
Lamb fores—plain or rolled	4
Veal	
Cutlets	1
Chops	2
Roast	3
Pork	
Fresh shoulders	3
Loins (roast)	3
Sausage meat	4
Chops	3
Packaged link sausages	4
Fresh ham	4
Salt pork	7
Briskets	7
Poultry	
Frying chicken	4
Chicken	4
Cut-up fowl	4
Turkey	4
Duck	4
Smoked Meats	
Hams	7
Canadian bacon	7
Special bacon	7
Smoked dry beef	7
Smoked butts	7
Smoked shoulders	7
Piece bacon	7
Scotch hams	7
Tongue (whole)	7
Prepared Meats	
Skinless franks	5
Dinner franks	7
Boiled hams	3
Pressed hams	2
Minced hams	4
Spiced hams	4
Veal loaf	3
Luxury loaf	4
Tasty loaf	4
Combination loaf	4
Liverwurst	3
Salami	7
Bologna	4
Jellied corn beef	4
Jellied tongue	4
Blood pudding	4
Pork and Chicken loaf	3
Pickle and pimento loaf	4

John Small, Associates Control Maxson Food Systems

NEW YORK CITY—Control of the Maxson Food Systems, Inc. has been acquired recently by John D. Small, former Civilian Production Administrator, and his associates, according to reports here.

The concern, organized in 1945 by the W. L. Maxson Corp., manufactures and sells pre-cooked frozen meals. Mr. Small and his associates gained control through the purchase of a majority of the common stock, with an option on the remaining holdings of the W. L. Maxson Corp.

W. L. Maxson, who has resigned as chairman of the system, made the following statement in announcing the shift in control: "The expanding electro-mechanical operations of W. L. Maxson Corp. now require that the management devote its full attention to this program."

It is expected that the annual report, to be issued soon, will show a substantial loss for the systems operations in 1946.

Right on the nose!

You'll make a hit every time in a repair job when you have the right part on hand. Kelvinator's 50 parts depots, stocking a *complete* line of refrigeration parts and supplies, are conveniently located throughout the country to take care of your needs.

Quality products, *competitively priced,* are available if you call or will be promptly shipped upon receipt of your mail order.

DIVISION OF NASH-KELVINATOR CORPORATION, DETROIT

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REFRIGERATION PARTS AND SUPPLIES

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They are your dividend from a 2-year program of expansion in every department of Eastern!

Production is up, service extended, quality stabilized, and our finishing facilities greatly enlarged.

We are supplying chrome-nickel grades of Stainless Sheets in Nos. 1, 2, 4, 6, and 7 Finishes.

Eastern Stainless Steel Sheets may be specified with the new plastic protective "Liquid Envelope" which eliminates die marks and adds to the life of dies. Protects sheets in storage and transportation, too.

Our Laboratory and Metallurgical Department, recently expanded, will help you on fabrication and technique. Just "Ask EASTERN for the Answer when STAINLESS is the Question."

Write for our latest catalog. JMLco E-D4

ask Eastern for ~~the Answer~~ delivery when Stainless ~~is the Question~~ Sheets are wanted

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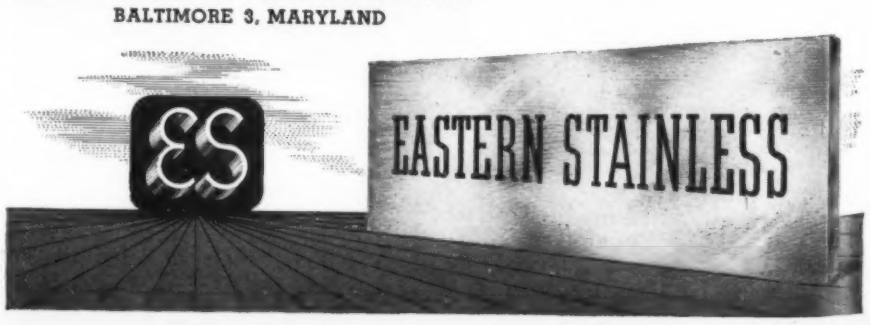

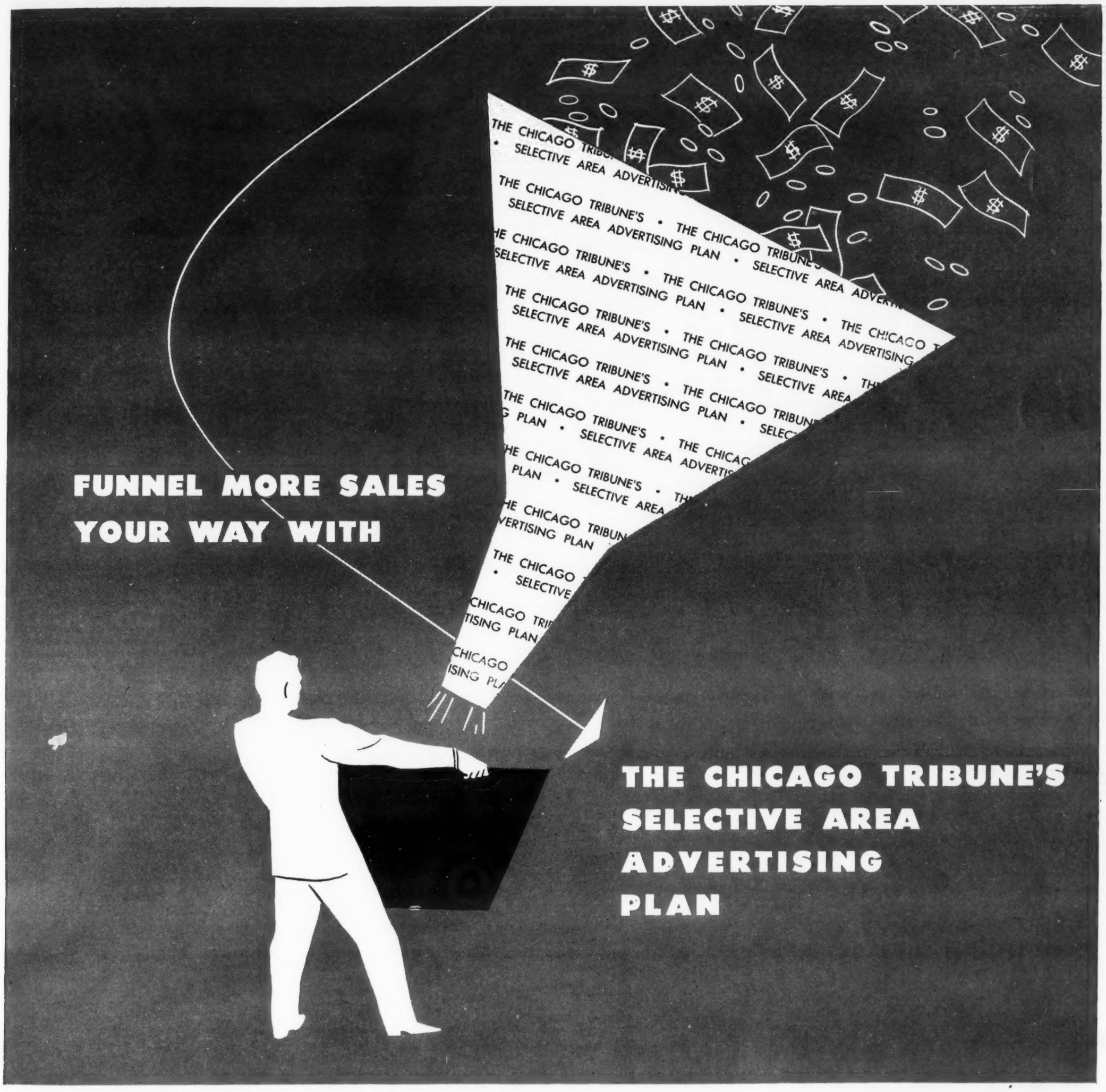
THE CHICAGO TRIBUNE'S • THE CHICAGO TRIBUNE'S • SELECTIVE AREA ADVERTISING PLAN
FUNNEL MORE SALES YOUR WAY WITH
THE CHICAGO TRIBUNE'S SELECTIVE AREA ADVERTISING PLAN

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1. Selective coverage of his local market
2. Prominent display of his name and location
3. The low rate of just 2⅛c a line!

YOU GET

1. Better identification of your local outlets
2. Enthusiastic dealer support
3. Advertising that pays off right away!

Faster results stem from this plan. Using it, you can get the jump on competition and get maximum benefit from the significant facts revealed in the Tribune's Durable Goods Study . . . one of the most comprehensive analyses ever made among consumers in the Great Chicago Market.

To learn how this plan can serve your specific needs, write your nearest Tribune representative, as shown below.

You can reach 63.4% of the $414,757,552 home appliance volume in the Great Chicago Market when you place your message before Tribune-reading families. Tribune rates per line per 100,000 circulation are among the lowest in America.

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March average net paid total circulation;
Daily, over 1,040,000; Sunday, over 1,500,000

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E. P. Struhsacker, Chicago Tribune
220 E. 42nd St., New York City 17

Fitzpatrick & Chamberlin
155 Montgomery St., San Francisco 4

W. E. Bates, Chicago Tribune
Penobscot Building, Detroit 26

MEMBER: AMERICAN NEWSPAPER ADVERTISING NETWORK, INC., FIRST 3 MARKETS GROUP, AND METROPOLITAN SUNDAY NEWSPAPERS, INC.

Field Report

Before the war one of the most popular editorial features to appear in the NEWS was the "Field Report," which is now being resumed.

In the "Field Report" the editors and staff correspondents of the NEWS bring to the readers, not their own opinions and interpretations, but report what distributors, dealers, and service contractors are currently finding out about the market, prices, service charges, and all the other problems that arise in distributing the industry's products.

'Study What the Prospect Needs, Then Sell It To Him,' Says Dallas Commercial Distributor

By C. Dale Mericle

DALLAS, Tex.—"We've got to sell the merchant what he needs—not necessarily what he wants," contends W. H. Segler, distributor for the McCray commercial line here and in 40 Texas counties.

"And the average commercial salesman concentrates on making a sale, not in helping the merchant."

These two statements serve to introduce some of Mr. Segler's ideas on what types of equipment should be sold, to whom they should be sold, and how the sale should be made.

"I am very enthusiastic," he says, "about the open type refrigerated dairy, meat, or vegetable case—for installation in large stores where there's plenty of traffic and a rapid turnover in perishables. But I don't think the small merchant, in general, should have one. He doesn't have enough traffic and sales.

"A big market will buy 100 boxes of strawberries, say, and put them in an open display case. Within a day, the berries will be sold—and there'll be only a slight loss, 1% maybe, due to spoilage. The big merchant can afford this.

"But a small grocer," continues Mr. Segler, will probably buy no more than a dozen boxes of berries. He won't sell them today, and maybe not tomorrow, either. And he can't afford to lose even a single box due to spoilage.

"The problem of the small merchant is further complicated by the fact that if he buys an open case, he'll buy only one and attempt to use it for all types of products."

The reach-in case, or a closed case, is a much better bet for the very small merchant, because, in Mr. Segler's opinion, it will keep foods fresh and saleable longer.

He likens the present trend toward open cases for the very small merchant to the "pre-war boom when everybody was trying to sell the small merchant on putting in a lot of display cases."

Tied in closely with the problem of what to sell to whom is perhaps the biggest problem—how to sell it. Admittedly there hasn't been much of a sales problem during the past five or six years—due to wartime shortages of equipment.

But the time is practically here when selling will again be something of a problem, says Mr. Segler, who seems to feel that he's ready for the push.

One of the things he does to help sales is to prepare rapid sketches of store layouts or special jobs (such as that illustrated) wherever practical.

"A merchant or any buyer, for that matter, likes to look at the products he's thinking of, or planning to purchase," explains Mr. Segler. "So I often draw a sketch for him.

"I always use a colored pencil, usually red or blue, in making these sketches. Color, especially red, is effective, much more effective than plain black pencil drawings.

"In trying to sell a job you may often run out of things to talk about. We, also, are so used to our line of equipment that we don't realize that the prospect doesn't know as much about our product as he should.

"It's poor business to sit and wait for the customer to start talking and ask questions. So, what I try to do after making the first contact on the sale is to get away and quickly prepare a sketch, showing important details, such as which way the doors swing, etc.

"Then I come back to let the prospect look it over. He may say that he wants the door to swing left instead of right. That happened on the Jay's Marine Grill job. (See illustration).

"That's all right. That's just what I wanted him to say. By the time we've both gone over the first sketch, I'll know exactly what his problems are, and he'll know the advantages we can offer him."

It may be necessary for a revised sketch to be made, and this second one may be altered a bit here and there. Or if it's a special job, Mr. Segler will send the final, approved sketch (and usually the order) to the McCray headquarters, where draftsmen make a conventional drawing, correcting whatever minor errors may have been overlooked.

The above process was followed on the installation of the walk-in freezer and storage room for Jay's Marine Grill, says Mr. Segler.

"Incidentally," Mr. Segler added, "we've installed $40,000 worth of refrigerating equipment for this popular eating place."

The walk-in job in question provides both -10° F. freezing and storage space, plus a 34° F. room. The interior of both rooms is finished in stainless steel. Front "high" temperature room is 109 in. wide, 73 in. long, by 74 in. high (interior measurements). Behind it is the low temperature room measuring 109 in. wide, 74 in. high, and 101 in. long.

Water defrost coils are employed in both rooms. (The sketch shows a "Kold-Flo" coil in the 34° room, but this specification was changed before the job was finally installed).

The -10° F. room is powered by a 3-hp. water-cooled condensing unit; the 34° room by a 2-hp. water-cooled unit.

Purpose of this installation, explained Mr. Segler, is to permit foods to be prepared in advance and frozen for later use.

"This grill is extremely popular here in Dallas," he says. "Although it is an immense place, there are usually lines of people waiting to get in during mealtimes. The owner uses this box for storage of foods prepared in off-peak periods and thus provides quicker service to his customers.

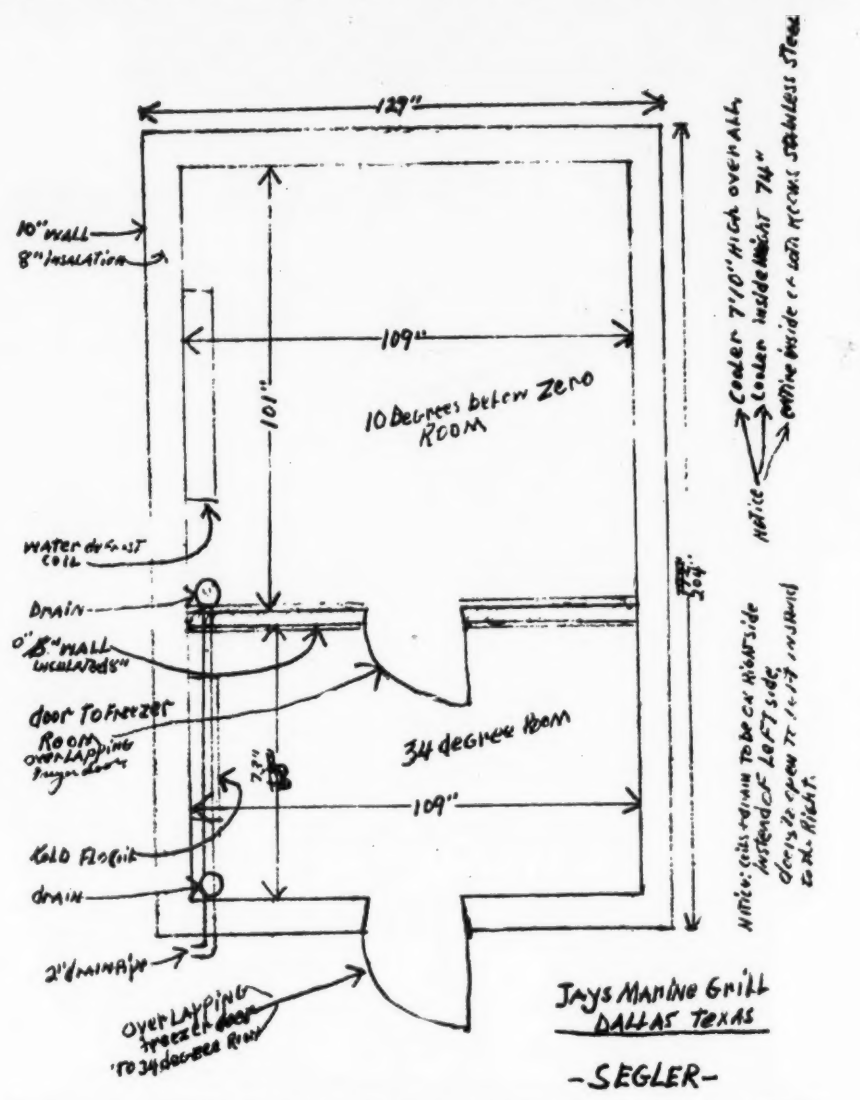
"I know that the average refrigeration engineer will tell me that I can use 25% to 40% less capacity than I've installed on this job," declares Mr. Segler. "That's wrong, however, and it cost me nearly $500 to find it out.

"The operator of this restaurant really works his refrigeration equipment hard. Our first job for him was a dough refrigerator. We had quite a bit of trouble at first, and finally found out that we simply didn't have enough capacity for the rough treatment," he went on to explain.

"On this latest job, for example, we know that the service doors may be opened every minute for an hour or two at a stretch sometimes. Or maybe the doors will be left standing open longer than they should.

"That's the way this man wants to operate and he's willing to pay for the extra capacity that will allow him to do it. We put a 2-hp. machine on the high temperature room of this latest job for another reason, too. The owner may decide to turn it into a -10° F. room, also. The unit can handle that temperature, too," says Mr. Segler.

Sales Work Is Abetted by This Kind of Sketching



In selling commercial refrigeration equipment, W. H. Segler, McCray distributor in Dallas, often makes a quick sketch of the proposed layout to give the prospect something concrete to discuss. He uses colored pencils to "brighten up" the sketches. When changes are demanded by the prospect, they are made right on the sketch (see notes in sketch above), which is half the size of the original. This sketch represents a proposal for a part of the $40,000 worth of equipment installed in Dallas restaurant.

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W. H. Segler, McCray distributor in Dallas, believes that the key to success in the commercial refrigeration field is to "sell the merchant what he needs." (Incidentally, that's a neat shelf arrangement behind Mr. Segler—a handy by-the-desk file for price sheets, literature, and all kinds of documents).

Field Report

Frozen Food Equipment Sells Well In Oklahoma, But Some Other Types of Refrigerator Items Lag

TULSA, Okla.—"Open type frozen food display cases are a natural for Tulsa and our surrounding territory, but, strange as it may seem, other types of open refrigerated cases are harder to sell in Tulsa than in the small towns around here," declares M. E. O'Bannon, who operates a large commercial refrigeration, air conditioning, and heating business here.

There are two or three explanations for this seeming paradox. For one thing, he says, the merchants here in town are somewhat conservative in that they don't like to make radical changes overnight.

"The big stores here aren't convinced that it's the best thing to do, and if they do make any changes, it's usually done gradually. In the Fred Wolferman chain market here, for example, we just recently installed a single 8-ft. open case. That's typical of the merchants here. If they decided to install open equipment, they'll put in one case at a time.

"Of course," he points out, "there's another reason, too. Where open type cases are used, a lot of floor space is required for their use to be most effective. Most of the stores in Tulsa are too crowded to permit a successful installation. Many have only 25-ft. fronts."

The big, self-service supermarkets that abound in so many parts of the country aren't found here. Tulsa people, according to Mr. O'Bannon, apparently prefer to be waited upon.

But there's no question about open frozen food cases being in great demand, he says.

CASES USED FOR ICE CREAM

"They're being used not only to display frozen foods but ice cream as well," he points out. "Some of our installations have boosted ice cream sales as much as 1,000%! That increase is only natural, however. Ordinarily ice cream is stored in closed cabinets out of sight, and when it's brought out where people can see it in the open type case, sales are bound to increase."

(Proof that Mr. O'Bannon is not exaggerating when he speaks of the heavy demand for open, frozen food cases is probably indicated by the fact that this interview was interrupted by a long distance call—an "emergency" call, that is, since the telephone strike was still on—from a small-town, Oklahoma grocer to say he'd take that open case they'd talked about just the day before.)

O'Bannon's is a big firm and occupies a big building. Commercial lines handled include both Tyler and Sherer-Gillett, and in addition, Chrysler Airtemp air conditioning and heating products are sold.

The O'Bannon building measures 140 by 100 ft., one small corner of which is leased out to a butcher and restaurant supply house. Besides a large display room, the building allows space for a large sheet metal shop, paint shop, and a service shop that is 60 by 40 ft. in size.

WHY REACH-INS ARE SLOW

Just at present there are quite a few reach-ins on display, but the inventory on this item recently dropped to a fairly low point, said Mr. O'Bannon. Inventory in the past on reach-ins has been heavy at times, he commented.

This was partly the result, he said, of having to take delivery on these boxes under a quota system, but there's another reason for reach-ins being rather slow-moving here.

"You must remember that Oklahoma is a dry state and so we don't have the opportunity to sell to wine stores and the like, who are big customers for reach-ins.

"Our reach-in market is largely confined to hotels and the like where a good box ordinarily lasts for years. Thus, these units are a little harder to move," explains Mr. O'Bannon.

"In general, though, I would say that the outlet for commercial is very promising. Supply is beginning to catch up with demand, but this simply means that we're going to have a chance in the next 18 months to get our feet on the ground."

O'Bannon's, despite its large shop, doesn't like to build walk-in coolers and the like, if they can possibly be avoided.

"We sell manufactured items 100% when we can buy them.

"In normal times, however, the company does a big business in reconditioning commercial equipment," said Mr. O'Bannon. "We have a paint spray booth where we completely refinish the cabinet, besides reconditioning the condensing unit and other parts of the box. We even reset the glass if necessary."

Jerry Packwood heads the service department, which not only does the reconditioning work but handles servicing on both the commercial equipment and the air conditioning and heating end of the business.

The air conditioning end of the business is managed directly by George Carr, who heads both sales and engineering, while Tom Venable heads up the heating department.

Engineer for both air conditioning and heating is Warren Frazier. One of Mr. Frazier's jobs is to make layouts of every job involving ductwork.

The firm builds its own ductwork and cooling towers in the sheet metal shop.

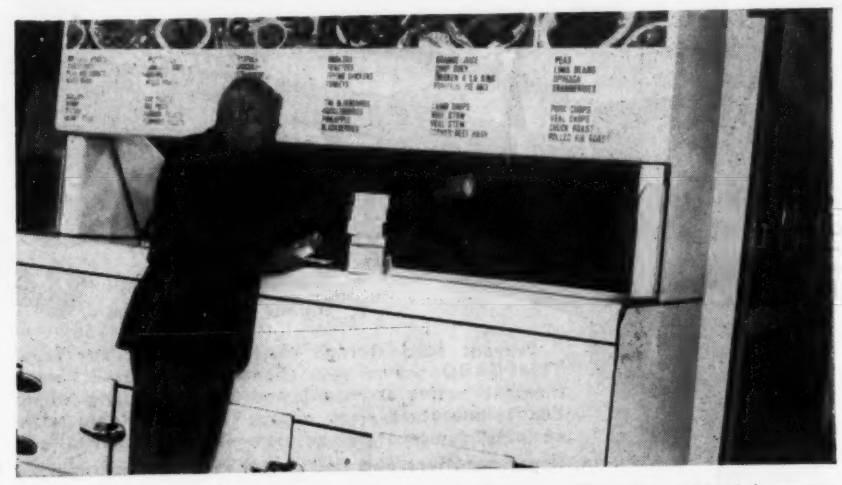
All in all there are 18 employes in the company.

"The air conditioning market in Tulsa is unlimited," Mr. O'Bannon flatly states. Since the firm took on the Airtemp franchise back in 1940, it has installed a grand total of 1,127 tons of package equipment and room coolers.

This figure is comprised of 190 5-ton units and 59 3-ton machines. And these units have gone to a total of 109 customers.

O'Bannon's deals in package conditioners exclusively, but many of the installations require ductwork for connection to the units. The ductwork, of course, is fabricated in the firm's sheet metal shop.

Perhaps the grand total of this Tulsa dealer's installed tonnage may not appear impressive, but the shortage of equipment during the war years enters the picture here. During the years of 1941 through 1944 the total installed tonnage was some 470 tons—an average of 118 tons a year. In 1945 and 1946, however, 657 tons were installed.



"Open type frozen foods cases have boosted ice cream sales 1,000% in some stores here," declares M. E. O'Bannon, refrigeration and air conditioning distributor in Tulsa, as he loads up a Tyler case on his showroom floor.

The 1945 total was 264 tons, while the 1946 total amounted to 393 tons.

"The market is unlimited," repeats Mr. O'Bannon.

Quite a variety of installations have been tabulated by the firm. Three machine shops have been air conditioned, nine residences, three sets of operating rooms, a radio station, two billiard parlors, and many offices, and stores, he points out.

It may be interesting to note also, that two of the three machine shop air conditioning installations were made after the war, indicating a potential peacetime market here, according to the tabulation of the company's air conditioning jobs.

SEE HOW SIMPLE IT IS TO CHECK REFRIGERANT AND OIL

SERVEL'S newest condensing unit — the Servel Supermetic—is exceptionally easy to install and check. For example, a liquid level test cock on the receiver provides an accurate and simple method of determining whether the condensing unit is properly charged while it is operating.

You simply open the test cock with a valve stem key. If liquid refrigerant escapes, the unit has a normal reserve of refrigerant charge. If only vapor escapes, then more Freon-12 should be added.

It's equally easy to check the unit's oil level. Although you'll rarely find it necessary to add oil to a Servel Supermetic, the above illustration shows how the two oil plugs may be easily removed from conveniently located positions.

Other interesting advantages of this modern condensing unit are described in a new folder entitled "Servel Supermetic." Write today for your free copy. Address Servel, Inc., Electric Refrigeration Division, Evansville 20, Indiana.

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Field Report

Larger Refrigerator Models Are Eagerly Sought by Prospects In Dallas Market

DALLAS, Tex.—"About 85% of the refrigerator customers in our territory want a 9-cu. ft. box. If I had a thousand today, I could ship every one," states Ferren Brown, manager of appliances and radios in the Dallas branch of Peaslee-Gaulbert Corp.

Peaslee-Gaulbert is said to be one of the largest distributing firms in the country, handling a wide variety of products besides appliances and radios. The immense Dallas branch takes in a big chunk of Texas as its territory, running east from Dallas to the Louisiana line, north to the Oklahoma border, south to Waco, and about 250 miles west.

Major appliance distribution is limited to Admiral products and the "Hiput" electric water heaters made by Ronan & Kunzl in Marshall, Mich.

As for the supply on major appliances, Mr. Brown says he still isn't getting enough to take care of his dealers.

"Shipments probably amount to 50% of what we need. I suspect that the figure is really closer to 25%, and I believe this pretty well applies to most major appliances," he declared.

Considerable interest is also shown in the Admiral Dual-Temp, especially its feature of providing considerable storage space for frozen foods.

"I would say that 90% of our dealers' customers want the Dual-Temp."

The electric water heaters are moving exceptionally well, especially the 6-gallon model. Hiput models are also available in 12, 20, and 30-gallon sizes, but the supply of the smallest model is greatest, he said.

The supply situation on radios is too good, implied Mr. Brown. Dealers apparently have quite a few on their hands which aren't moving very well. Prices are being cut in some instances.

Despite the apparently unlimited supply of cheap, natural gas in much of Texas, electric ranges sell very well in this territory, he declared. There are probably two reasons for this.

Electric utilities have plugged ranges strongly and effectively.

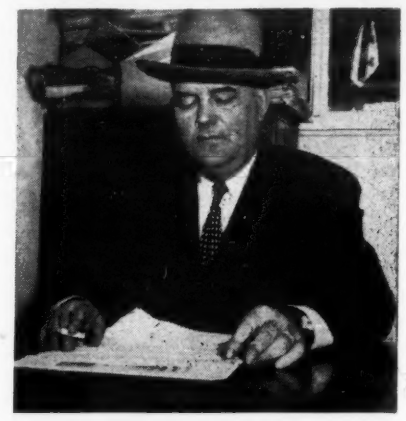
Another reason is the promotion of Rural Electrification Administration power lines in the rural areas.

"REA lines are going into the country where they don't have natural gas. And since the war Texas has put in more REA lines than any other state in the union. This will undoubtedly mean increased range sales.

"We do know, for example, that we can't sell battery-operated radio sets any more, and before the war they accounted for 50% of our radio sales," pointed out Mr. Brown.

As for the general outlook on the immediate future of the appliance business, Mr. Brown hesitates to make any predictions.

It may be significant, however, that he hasn't added any new dealers in the past six months and he says he intends to continue this policy for the present, at least.



O. B. Kennedy, who heads a commercial refrigerator manufacturing and sales firm in Dallas and Ft. Worth, cites need for a small display case.

* * *

Small Display Case Called Needed Item

DALLAS, Tex.—"When things in the commercial refrigeration business get settled down, we're going to concentrate on one or two items which will probably include a 5 or 6-ft. display case.

"There should be a big demand for that size around here. It can be used in a wide variety of places—cafes, delicatessens, small grocery stores, and the like," declares O. B. Kennedy, owner and operator of the O. B. Kennedy Refrigeration Co.

Maintaining offices in both Dallas and neighboring Ft. Worth, the Kennedy firm also operates a small factory which builds commercial equipment for local sale. This is the Henry Trotter Co. in Ft. Worth. It was acquired by the Kennedy company last fall.

Besides handling commercial sales, installation, and service, Mr. Kennedy says he does a big business in attic fans hereabouts. He sells the Hunter and Great National makes.

"You can get almost anything you want now," he declares. "Motors, however, are still a big bottleneck, and this seems to be chiefly in the ½-hp. size."

Although he opened his own business only a year ago, Mr. Kennedy is not without experience in the commercial refrigeration field. He had previously spent four years as a McCray representative here, and his previous record includes years of selling, though not in refrigeration.

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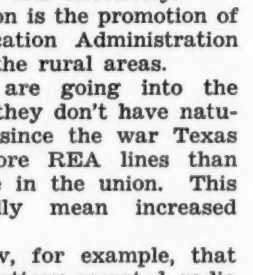

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Bank Finds Many Reasons for Installing 400-Ton, $100,000 Air Conditioning System

CHICAGO — The American National Bank & Trust Co., one of the six major banks in Chicago, has announced that work will begin shortly on the installation of a complete system of air conditioning extending from basement safe deposit vaults to the seventh floor trust department.

The comfort of customers and employes, the protection of valuable records, and savings in cleaning and decorating costs are important reasons for the decision to air condition the entire bank, bank officials report.

The proposed new system is so designed as to make it unnecessary to change existing ventilating facilities.

Since December, 1933, when the bank moved into its present location, the second floor, four departments on the third floor, and the clearing house on the fourth floor have been air conditioned. This experience with air conditioning convinced bank officials that the $100,000 investment for new equipment and alterations will be profitable in terms of lower building maintenance costs, more good customer relations, and improved working conditions for bank's employes.

Approximately 80,000 sq. ft. will be completely air conditioned under the present plan. Arrangements are being made to extend air conditioning to the 12,000 sq. ft. of the eighth floor in a year and a half and to the ninth floor in four and a half years. These floors are not now occupied, but the space is available for expected expansion.

A 400-ton mechanical refrigeration system will be installed in a sub-basement and a system of fans to force the conditioned air through the bank will be located on the fifth floor. Modern humidity and temperature controls will be employed and the air will be thoroughly filtered. A transformer will be installed in the sub-basement to convert direct current to alternating current to accommodate the refrigeration unit. All old mechanical refrigeration equipment will be completely replaced.

Another detail that is attracting attention is the elimination of furred-in ceilings to hide duct and pipe work.

Reports to the Refrigeration Equipment Manufacturers Association indicate that building owners will watch the success of the installation in the light of the value of air conditioning for renting untenanted office space.

5 New Commercial Sales Sections at Frigidaire Aid Design, Distribution

DAYTON—Five new sales management posts have been created within the Commercial Refrigeration Sales Department of Frigidaire Division of General Motors as an integral part of a current, nation-wide expansion program, W. F. Switzer, the company's newly appointed commercial sales manager has announced.

The new managerships increase the Commercial Sales sections from two to seven, Mr. Switzer pointed out.

"Frigidaire's Commercial Sales Department is being strengthened and geared to move rapidly expanding product lines from the factory to the market place," Mr. Switzer continued to explain.

"With a key man in charge of each sales section, greater specialization of individual product lines will be possible," continued Mr. Switzer. "The department is now organized so that each of the seven major classifications of our commercial refrigeration business will be able to stand on its own feet—with a key man in charge. Thus, each department will be afforded adequate creative-planning programs and the follow-through activity that it deserves."

J. A. Smith has been promoted to manager of Farm and Locker Market Sales. Air Conditioning Sales is being headed by C. F. Wood, a specialist with 16 years of experience in his field. New manager of Special Applications is G. A. Hayner. G. H. Ewing, who has been promoted to manager of Case and Fixture Sales, has been associated with the company for 16 years. L. E. Smith, is the new manager of Water and Beverage Cooler Sales.

H. A. Beck, manager of Ice Cream Cabinet Sales, and R. W. Pocock, manager of National Business Sales, will continue to serve as heads of their respective departments. A. C. Freimann, will also continue to serve as Assistant Commercial Sales Manager.

Worthington Income for Quarter Set at $1,702,657

WILMINGTON, Del. — A net income, after taxes, of $1,702,657, equal to $5.51 a common share after preferred dividends, was earned by the Worthington Pump & Machinery Corp. during the first quarter of 1947, Clarence E. Searle, president, announced at the annual meeting of stockholders recently.

He compared this figure with the $1,550,540 net loss, without considering tax carryback refunds, reported for the same period in 1946.

Shipments are currently being made at almost $7,000,000 per month.

He reported that unfilled orders had swelled to $61,000,000 from the previous peacetime peak of $54,600,000 reached last Dec. 31.

Mr. Searle also pointed out that the company has completed the major portion of its program of acquiring additional facilities owned by the Government and now under lease. He added that negotiations are now being made for the purchase of the remainder.

TEMPERATURES *Made to Order* with TYPHOON AIR CONDITIONING

The handsome compact appearance of the TYPHOON self-contained air conditioning unit belies its rugged construction—an engineering achievement backed by over 30 years of practical experience.

Each unit is made to deliver full rated capacity under most difficult conditions—12,000 BTU's of air conditioning performance for every ton of rating. TYPHOON's exclusive large flo-turn cooling coils and the oversized all-copper condenser, are two of the many features that make for trouble-free performance and maximum customer satisfaction.

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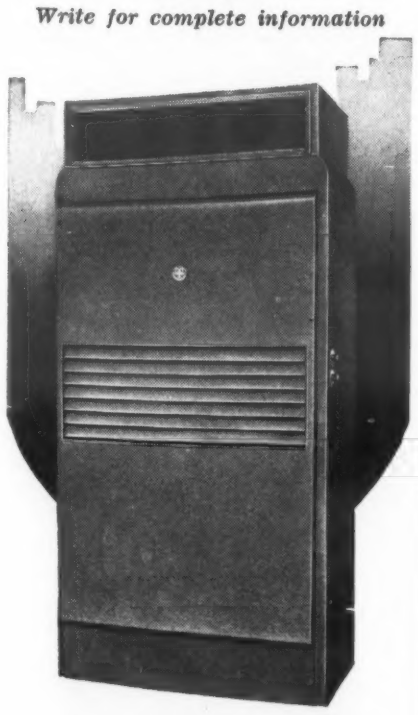
A few dealer territories are still open

Write for complete information



Complete air conditioning: Cooling, filtering, moisture removal, non-draft circulation — easy to install — low upkeep — 3-ton, 5-ton, 7-ton sizes — full rated capacity.

Dept. 212

TYPHOON AIR CONDITIONING CO., INC.
Division of Ice Air Conditioning Co., Inc.
794 Union Street Brooklyn 15, N. Y.

Do yourself this good turn today!

Return Empty Cylinders

● Because the shortage of cylinders continues to threaten shipments of "Freon" refrigerants, you'll be doing yourself a favor by returning every empty cylinder at once.

You will be helping to insure delivery of "Freon" when you need it . . . reducing the risk of running out of it entirely . . . and aiding in overcoming the present serious shortage of cylinders. Steel shortages are still holding up delivery of new cylinders.

So take stock *now* of the "Freon" cylinders on your property. Earmark the empties for immediate return . . . today if possible. Ask your customers to so the same. In this way you'll help bridge the gap . . . help make it possible to ship "Freon" promptly.

Return Every Cylinder the Day It's Empty

Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Delaware.

THE NEED IS URGENT!

Ship every empty "Freon" cylinder via freight collect to: Kinetic Chemicals, Inc., Carney's Point, N. J.

KINETIC

FREON

REG. U. S. PAT. OFF.

safe refrigerants

"FREON" IS KINETIC'S REGISTERED TRADE MARK FOR ITS FLUORINE REFRIGERANTS AND PROPELLENTS

Pressed Steel Makes 150 Electric Ranges Per Day

PITTSBURGH—Pressed Steel Car Co., Inc.'s home appliance division in Chicago is currently producing 150 "Presteline" electric ranges per day, according to Ernest Murphy, president.

At the same time Mr. Murphy announced a backlog of orders totaling $52,103,000 for freight and industrial cars and parts.

Thus far production of the appliance division, established in March, 1946, is limited to ranges.

March Vacuum Cleaner Sales Spurt 142% over 1 Year Ago

NEW YORK CITY—March household vacuum cleaner sales showed an increase of 142% over one year ago and 17% over the previous month, according to C. G. Frantz, secretary-treasurer of the Vacuum Cleaner Manufacturers Association. Total sales in March were 320,047 units.

New Sears Washer

Sears-Roebuck "Kenmore" washer on which national distribution is expected by mid-summer.

Radio Trade-In Schedule Devised To Help West Coast Dealers Observe Fair Pricing

OAKLAND, Calif. — A trade-in schedule intended to "enable the retail dealer in radios to comply with the fair trade price controls placed upon his merchandise by the manufacturers or wholesalers" has been worked out by the radio committee of the Appliance Dealers Trade Association of Alameda and Contra Costa counties.

"Any trade-in that cannot be sold, after reconditioning, with a fair mark-up is a price cut on the new Fair Trade merchandise swapped for it," the association points out in announcing the following schedule:

"No trade-in of any radio that is older than 10 years, but stores will send sets to Red Cross, Army and Navy Rehabilitation Centers, Oak Knoll, etc., at no cost to customer.

"Table Models: Any table model having a built-in loop antenna, $2.50; table model non-automatic combination up to 10 years old $5; table model automatic combinations up to 10 years old, $7.50.

"Portable Radios: Any portable, a.c.-d.c. or straight battery, $2.50.

"Auto Radios: No trade-in value.

"Console Models: Straight console without phonograph 1937 through 1939 without built-in loop antenna and push buttons, $2.50; straight console without phonograph 1937 through 1939 with built-in loop antenna and push buttons, $3.50; straight console 1940 through 1942 without phonograph and with or without built-in loop and/or push buttons selling originally when new for (a) up to $50, $5; (b) from $50 to $100, $7.50; (c) from $100 to $150, $10; (d) from $150 up, open.

Console Combinations: 1937 through 1939 non-automatic, $5; 1937 through 1939 automatic, $10.50; 1940 through 1942 either non-automatic or automatic selling new originally up to $100, $15; 1940 through 1942 selling originally for $100 or more, use the following formulae: allow 25% of the original selling price of the radio. Example: Radio having original list price of $200, your trade-in allowance, 25% of list, $50. Exceptions: Mail order and stencil brands 50% of above allowances.

Chicago's First Stoker Exposition Opens May 8

CHICAGO — Streamlined beauty combines with utility and convenience in the new bin-feed and hopper type coal stokers to be shown to the public May 8-14 at Chicago's first Stoker exposition.

Fourteen distributors will be represented in the exhibit, which will be held in Commonwealth Edison assembly hall, 140 S. Dearborn St. Admission is free.

Jointly sponsored by the Midwest Stoker Association and Chicago Coal Merchants Association, the show will be open from noon to 10 p.m. daily except Sunday.

Two miniature urban basements containing tiny stoker and heating equipment, recreation rooms, and all-electric laundries will be exhibited.

Kelvinator Quarterly Profit Hits $4,322,508

DETROIT—Nash-Kelvinator Corp. on April 28 reported a net profit after taxes for the quarter ended March 31, 1947, the second quarter of its fiscal year, of $4,322,508, amounting to 99 cents per share on 4,341,110 outstanding shares.

This compares with a profit of $4,100,040 for the previous quarter, and with a loss of $1,152,775 for the corresponding period of 1946.

The first six months of the current fiscal year shows a net profit after taxes of $8,422,548, against a net loss of $1,791,633 after tax adjustment for the like period of a year ago.

Iowa Distributer Moves Into 100,000 sq. ft. Bldg.

DES MOINES, Iowa—The G. W. Onthank Co., distributor of home appliances, has moved into new and enlarged quarters at 10th and Mulberry Sts., Des Moines.

Total area of the five story building is more than 100,000 sq. ft., all of which is occupied by the company, G. W. Onthank, president, said.

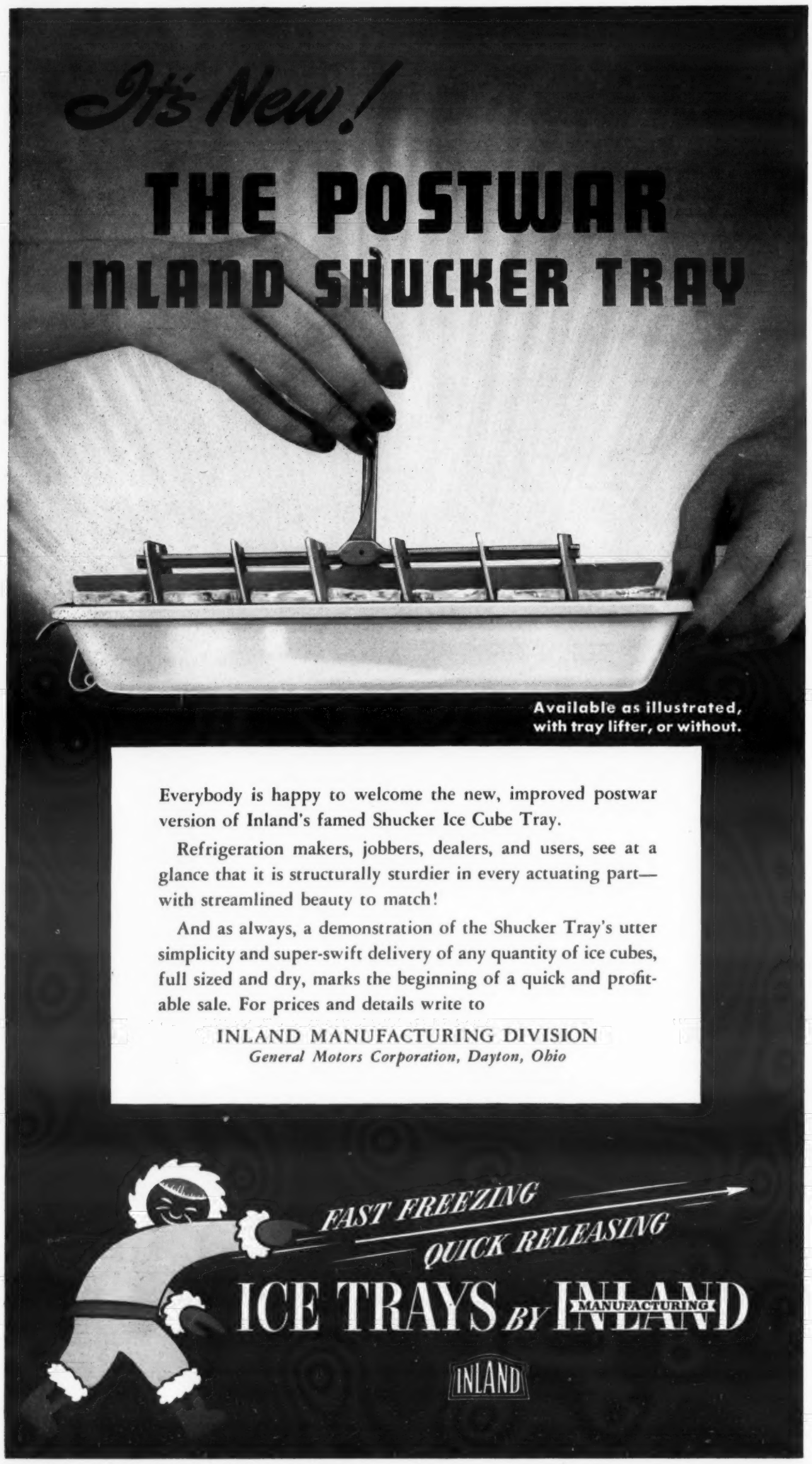
Factory trained personnel maintains a large parts and service department for dealers while the major portion of the first floor of the building is a showroom where products are displayed for the convenience of dealers.

A railroad spur that comes directly into the building can handle two 40 ft. boxcars simultaneously. The structure also has a large unloading dock which will handle five trucks as well as the two boxcars at one time.

Mr. Onthank also announced that a new warehouse and display rooms occupying over 45,000 sq. ft. of floor space, will be opened in Omaha, Neb., at 10th and Davenport Sts. late in May.

Brandon Aids Philco Buying

PHILADELPHIA—D. L. Brandon has been appointed assistant purchasing agent of the Refrigerator Division of Philco Corp., it has been announced by William MacMurtrie, general purchasing agent.



Available as illustrated, with tray lifter, or without.

Everybody is happy to welcome the new, improved postwar version of Inland's famed Shucker Ice Cube Tray.

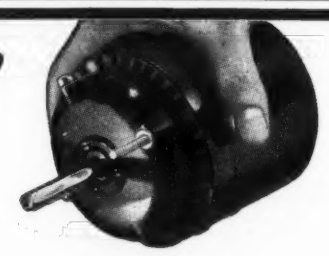
Refrigeration makers, jobbers, dealers, and users, see at a glance that it is structurally sturdier in every actuating part—with streamlined beauty to match!

And as always, a demonstration of the Shucker Tray's utter simplicity and super-swift delivery of any quantity of ice cubes, full sized and dry, marks the beginning of a quick and profitable sale. For prices and details write to

INLAND MANUFACTURING DIVISION
General Motors Corporation, Dayton, Ohio

FAST FREEZING
QUICK RELEASING
ICE TRAYS BY INLAND MANUFACTURING
INLAND

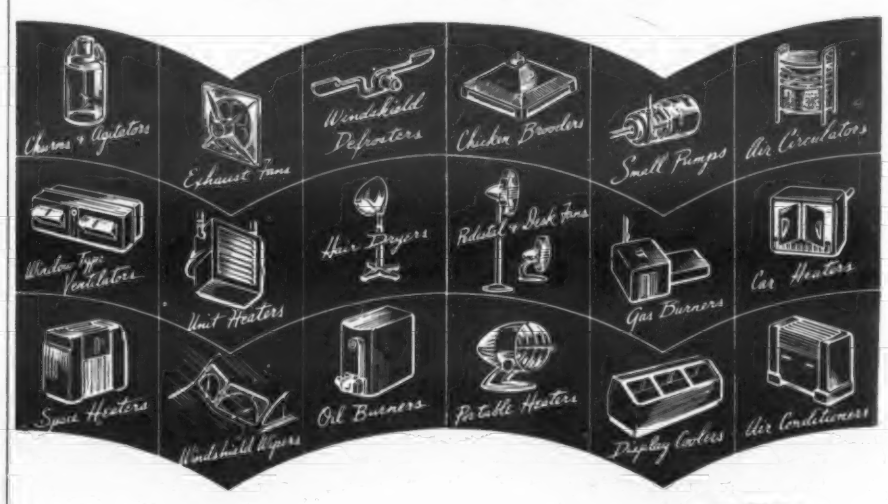
Practical



Redmond MICROMOTORS

A great variety of famous products are powered by Redmond Micromotors. Shown above is the Redmond Type "T" four pole shaded pole A.C. Micromotor, built in sizes up to 1/25th horsepower. Other A.C. models are built in both smaller and larger sizes. Series and shunt wound D.C. Micromotors are built in sizes up to 1/20th horsepower for use in automotive applications.

Below are illustrated a few of the many products in which practical Redmond Micromotors are serving dependably.



REDMOND COMPANY, INC.
OWOSSO, MICHIGAN

REDMOND

MICROMOTORS ☆ CONTROLLERS ☆ BLOWERS

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

ture of one major product. These products include such items as superchargers, clutches, rubber-metal adhesives, refrigerators, agricultural implement parts, bath tubs and sinks.

Just try to imagine all of these different products being made under one roof! What chaos and confusion! It would be either a very small operation for each or a very inefficient one for all.

Case History: Norge

So it is with the producer of a line of major appliances such as the Norge division of Borg-Warner. Prior to the war, those divisions roughly classified as being in the Norge group (Norge, Detroit Gear, and Detroit Vapor Stove) manufactured their several products in two plants in Detroit and one in Muskegon Heights, Mich. The Detroit plants produced things of a similar character—gearing, transmissions, and other automotive parts, as well as refrigerator compressors and washing machine transmissions.

The refrigerator and washer units were then shipped to Muskegon Heights from which Norge shipped these appliances along with electric and gas ranges and home heaters. Although the end products were different, the manufacturing work was of a similar character (stamping, welding, porcelaining, painting, and assembling). So far so good. Now let's yield the floor to Howard E. Blood, president of Borg-Warner's Norge division:

"Just before we went to war, we became aware of the need for a revision of our facilities to achieve even more efficient operations. This, we felt, could best be obtained through complete decentralization of the various production units.

"A very short time before Pearl Harbor, we obtained a factory in Muskegon, Mich., for output of gun mounts during the war. Then, along toward the end of the war, we bought a plant in Effingham, Ill., and built a new one in Herrin, Ill. After the war was over, we also acquired a plant in Chattanooga, Tenn.

"The result has been that virtually every product we make is built in a plant laid out and designed for its sole manufacture. Gas and electric ranges are made in Effingham, washing machines in Herrin, hermetically-sealed motor-compressor units are produced in Chattanooga, both open and sealed compressors are manufactured in Muskegon. A large portion of our production in the big Muskegon Heights plant is devoted to output of refrigerators, but there we also make home heaters and other products on other assembly lines.

"As a general rule, however, raw materials flow in one end of the plant, are processed on the various machines, are assembled into finished products, and move out the other end of the plant, crated, for loading into freight cars or trucks."

This type of operation cannot be equalled for efficiency. Just as the skilled artisan, working alone or with a few helpers in his small shop, concentrates his sole attention on the production of one item, so too, do those in the single-purpose decentralized plant direct all their efforts to the output of one product.

Concentrated under a single roof, for the requirements of that plant alone, are management, purchasing, engineering, accounting, personnel, and all the equipment needed for actual production. It is the responsibility of each executive to conduct just one phase of a specialized operation.

The plant manager, for example, doesn't have to worry about a stoppage in a washing machine line affecting his output of ranges. Ranges are all he is responsible for, and all he needs to think about.

Saleswise, the single-purpose plant is unsurpassed. A change in the product's design affects output of one product only, and this change, therefore, is reflected quickly in the field.

Just as the top executives are able to operate more effectively in a smaller plant, so also, are the supervisors and other employes. The efficiency factor which is inherent in specialization is quite evident at the personal level throughout a decentralized operation.

A less tangible, but equally important aspect of decentralization is rooted in psychology. This has to do with pride of workmanship. In the large, multi-purpose plants, a worker may make just one small part for one of several products. He may never see the finished product.

In the single-purpose factory, he still may make only one small part. But he is making it for a product he can see in its final form every day. He knows how he helped this part emerge from raw metals to a gleaming white refrigerator or range or washing machine. And he can take pride in his contribution to the well-being of the nation. This feeling of pride, obviously, makes for better and more interested workmanship.

Decentralization, of course, has its drawbacks. Remoteness of the individual plants complicates many main-office problems. However, the self-reliance of local managers and employes which is made necessary by the independence of the individual plant executives and employes more than offsets this disadvantage. Knowing he cannot lean on the main office for minor, day-to-day decisions, the local plant manager and his assistants become more self-reliant.

One of the finest testimonials which this trend toward decentralization can present is that it has had a salutatory effect on the American way of life.

For many past years, it was necessary for the young people of the small community to leave home if they were ambitious. They had to go to the big city to carve out careers for themselves, and, in so doing, they had to leave home and friends and the social life to which they were accustomed and which they preferred.

By moving industrial plants to smaller communities the big corporations are taking something to the young folks of those towns. They are providing these young people with opportunities to learn large-scale manufacture and, incidentally, to make a good living.

They and their children, it can be hoped, will benefit through the years because large business operations have seen fit to decentralize.

25 cu. ft. Stainless Steel Reach-in Refrigerator

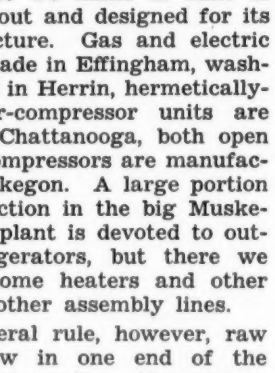
ALL STEEL CONSTRUCTION... AND STAINLESS, TOO!

This new Koch Refrigerator is made of stainless steel inside and out! It is fully insulated in every nook and corner. There are no wooden members to interrupt the solid blanket of heavy insulation. And for the first time in refrigeration history, such a refrigerator is *welded solidly into one single unit!* Capacity is 25-cu. ft. with 30-sq. ft. of usable shelf area. Shelves are adjustable. Lights are fully automatic.

Soon, this new model will be shipped to Koch distributors in every part of the world. In keeping with Koch traditions of quality, performance, and craftsmanship, every one will be a perfect refrigerator.

KOCH Refrigerators
North Kansas City 16, Mo. Since 1883

TREMENDOUS DEMAND!
THE SENSATIONAL, NEW
FREEZRLARM



PROTECTS FROZEN FOODS

The exclusive, self-contained warning system . . . sounds an alarm whenever temperature rises above danger zone FROM ANY CAUSE. Not connected in any way with electrical system! Every freezer owner and locker plant needs one. Liberal dealer discounts. Literature available.

CASH IN ON THE BIG SALES AND PROFITS
NATIONALLY ADVERTISED
WRITE FOR OUR DEALER PROPOSITION
FREEZRLARM COMPANY
832 S. LUDLOW ST., DAYTON 2, OHIO

They'll Do It Every Time . . . . By Jimmy Hatlo

OOPS! YOU SPELLED "RECEIVE" WRONG, DIDN'T YOU? AIN'T IT "IEVE"? LUCKY I JUST HAPPENED TO LOOK OVER YOUR SHOULDER
THE OFFICE SNOOP IS ON DUTY AGAIN... HE SPELLS LIKE HE WORKS, TOO- NOT SO GOOD!
HE SPENDS ABOUT TEN MINUTES AT HIS OWN DESK AND THE REST OF THE DAY FLOOR-WALKING!
HE HANGS AROUND THAT NEW BLONDE SO MUCH YOUD THINK THEY WERE ON A TANDEM BICYCLE-
SOME DAY HE'LL LOOK OVER A SHOULDER AN' SEE HIS OWN BLUE SLIP-
JIMMY HATLO 12-19
THERE'S ONE IN EVERY OFFICE --- TURN AROUND AND SEE FOR YOURSELF- THANX TO "US 4", READING, PA
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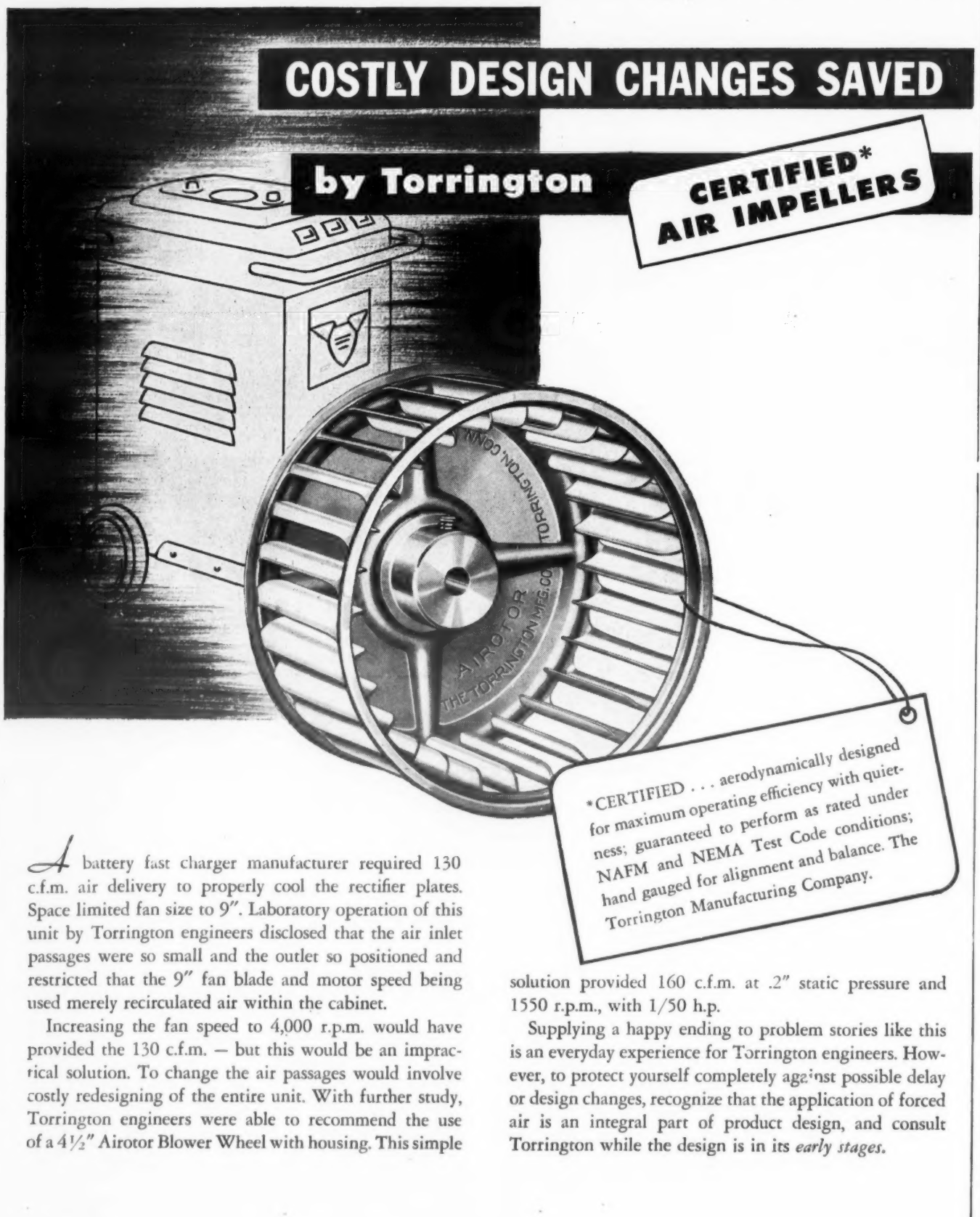
Out With Special Privileges - - Revise the Wagner Act!


COSTLY DESIGN CHANGES SAVED
by Torringtон
CERTIFIED* AIR IMPELLERS
TORRINGTON CONN
AIROTOR
THE TORRINGTON MFG. CO.
*CERTIFIED . . . aerodynamically designed for maximum operating efficiency with quietness; guaranteed to perform as rated under NAFM and NEMA Test Code conditions; hand gauged for alignment and balance. The Torrington Manufacturing Company.

A battery fast charger manufacturer required 130 c.f.m. air delivery to properly cool the rectifier plates. Space limited fan size to 9″. Laboratory operation of this unit by Torrington engineers disclosed that the air inlet passages were so small and the outlet so positioned and restricted that the 9″ fan blade and motor speed being used merely recirculated air within the cabinet.

Increasing the fan speed to 4,000 r.p.m. would have provided the 130 c.f.m. — but this would be an impractical solution. To change the air passages would involve costly redesigning of the entire unit. With further study, Torrington engineers were able to recommend the use of a 4½″ Airotor Blower Wheel with housing. This simple solution provided 160 c.f.m. at .2″ static pressure and 1550 r.p.m., with 1/50 h.p.

Supplying a happy ending to problem stories like this is an everyday experience for Torrington engineers. However, to protect yourself completely against possible delay or design changes, recognize that the application of forced air is an integral part of product design, and consult Torrington while the design is in its *early stages.*

THE TORRINGTON MANUFACTURING COMPANY, TORRINGTON, CONNECTICUT

AIRISTOCRAT FAN BLADES • AIROTOR BLOWER WHEELS • IMPROVE PRODUCT PERFORMANCE

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark registered U. S. Patent Office; Est. 1926

AIR CONDITIONING AND REFRIGERATION News

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F. M. COCKRELL, *Founder*

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Figures Can Lie

WHILE the Senate and the House bicker over budget reductions, a good friend of ours who has labored long and unsung in the Budget Bureau tells us that:

Instead of $37.5 billion as a figure for Our Nation's probable expenditures during the next fiscal year, the real expenditure total for all government agencies will be at least $10 billion greater.

Although Truman's projected budget of $37.5 billion for the fiscal year 1948 proved shocking to those Congressmen who had expected a considerably lower amount, the total of all projected expenditures for national government operations during that period—including U. S. corporations and credit agencies—is even more startling.

Actual gross operations of wholly owned government corporations and credit agencies in the fiscal year 1948 will amount to $11.4 billion. Except for the *net* expenditures of these corporations and credit agencies—which are estimated at a little more than $800 million plus a few hundred millions of additional funds—this $11.4 billion total is entirely outside the $37.5 billion budget presented to Congress by the President.

Allowing for unpredicted expenditures and exceptional funds, the aggregate of all government fiscal operations for which all we taxpayers are obligated in the next fiscal year will come close to $47.5 billion.

This is the *real* total of public funds which is involved in current budget discussions.

Appropriating committees of Congress are largely powerless with respect to their control over the $11.4 billion of gross operations of these above-budget corporations and credit agencies. These institutions finance new loans and purchases of commodities with repayments and receipts from sales. The receipts are not shown in budget figures for government receipts.

Their expenditures, which take the form of loans and purchases, do not, as a rule, require Congressional approval. Even their net expenditures are not included in appropriations. These net expenditures represent, in effect, the use of statutory authority to borrow from the Treasury, which in turn borrows from the public or takes the funds from tax receipts.

If Congress wishes to curb the activities of these extra-legal government corporations and credit agencies, it can do so only by amending the substantive laws under which they operate. Jurisdiction over these laws rests with various committees other than those in charge of appropriations.

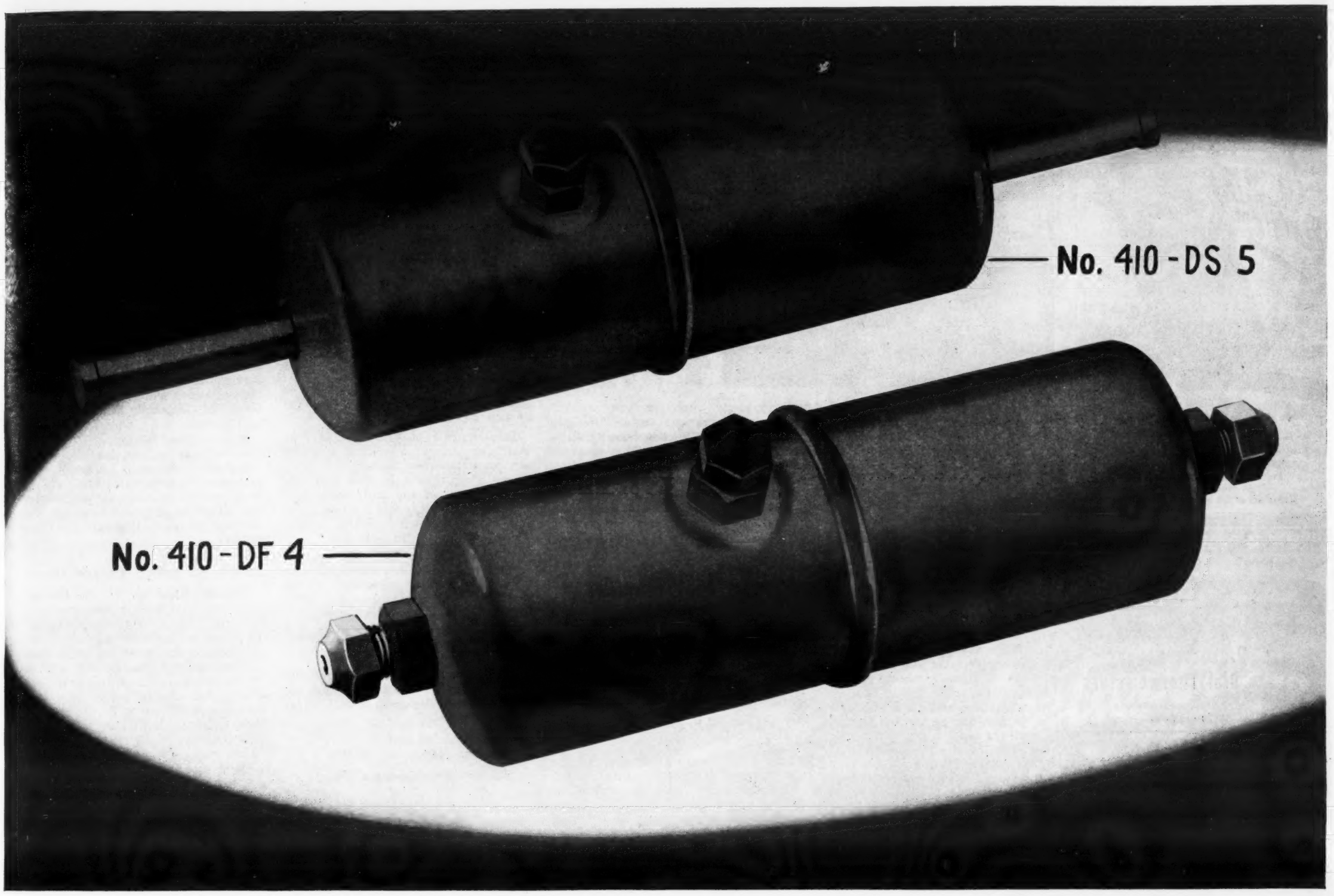
That $11.4 billion total appropriation for wholly owned government corporations and credit agencies, which we have questioned, includes $4.3 billion for new loans. The largest portion of these loans has been earmarked for agricultural purposes—including the price support program under which the Commodity Credit Corp. operates.

Also included are loans to home owners by the Reconstruction Finance Corp. and other agencies, plus the industrial and rural electrification loans made by the RFC, and loans to finance foreign trade granted by the Export-Import Bank.

Trend of the public debt remains upward, despite a temporary decrease as a result of a cash retirement of $1 billion of maturing certificates of indebtedness on Feb. 1. From a low point of $258.6 billion on Dec. 20, the gross debt increased to $259.8 billion on Jan. 31, an increase of $1.2 billion. On Feb. 4 the total had dropped to $258.8 billion.

Issuance of terminal leave bonds, trust fund securities, and savings bonds will mean a steady increase in our national debt total during the next few months, inasmuch as current budget deficits will prevent the retirement of an equivalent amount of maturing obligations.

We aren't so well off, financially, as the Administration would lead us to believe. Let's hope that our Congressmen will be frugal with OUR money.



Now... Moisture and Dirt Come out Fast in Your Larger Systems*, too!

Install new Large Capacity, Rechargeable

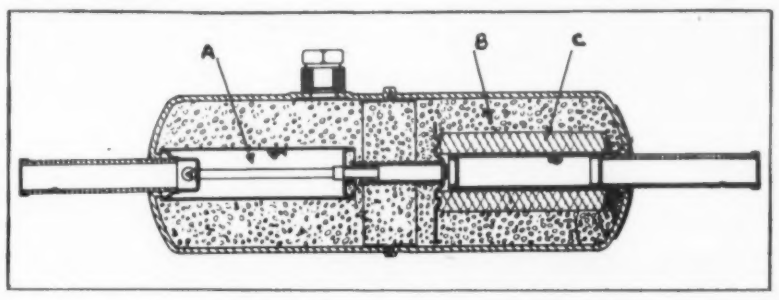
TRAP-DRI Drier • Filter • Strainer

• To you men who know how valuable the A-P TRAP-DRI can be on smaller systems up to 1 ton capacity — this announcement of a new larger-capacity TRAP-DRI will be welcome good news! It means you can give the "break" to both the larger systems, and those smaller systems which need a larger capacity drier for preliminary cleanout . . . Provide all these systems with the *extra protection* that means so much to improved system efficiency, avoidance of common troubles and service difficulties due to dirt, solder particles, scale, sludge and moisture.

• The new larger A-P TRAP-DRI starts cleaning up your system immediately, trapping all impurities and moisture that too often cause trouble. Offering *minimum pressure drop,* it provides a filter unit as effective as a 900 mesh strainer (removing materials as small as 5 microns in size) . . . *plus* a highly-efficient and adequate charge of Silica Gel.

Drying agent may be removed and replaced, or dried out and re-used.

• Installed on your larger refrigeration systems, this new larger capacity TRAP-DRI means improved operation, savings in service time, greater satisfaction-and cost-savings for your customers. You'll find them at leading refrigeration parts jobbers — or write for latest bulletin.



VERSATILITY IN INSTALLATION

Cross section of new 3-ton A-P TRAP-DRI showing: (A) Screen at inlet diffuses refrigerant into Silica Gel; (B) Silica Gel drying agent; (C) Honey comb filter element traps impurities as small as 5 microns, by depth filteration principle.

The new TRAP-DRI is supplied either with ½" male flare (DF-4), or ⅝" sweat connection (DS-5). May be easily connected to ⅜", ½", ⅝", ¾" and even ⅞" tubing if desired. This ready versatility makes the TRAP-DRI adaptable to a wide variety of systems.

*Model 410 carries 53.7 cu. in. of Silica Gel. Nominal rating, 3 tons Freon.

AUTOMATIC PRODUCTS COMPANY
2450 NORTH THIRTY-SECOND STREET • MILWAUKEE 10, WISCONSIN
Export Dept., 13 East 40th Street, New York 16, N. Y.

DETROIT PUBLIC LIBRARY

DEPENDABLE *Refrigerant Valves*

STOCKED AND SOLD BY GOOD REFRIGERATION JOBBERS EVERYWHERE . . . RECOMMENDED AND INSTALLED BY LEADING REFRIGERATION SERVICE ENGINEERS

"OILRITE"
Automatic
OIL SEPARATORS
by Temprite
WRITE TODAY
Keeps refrigerant free from oil and at its true boiling point.
Increases heat transfer up to 20%.
Constant oil level means no scored parts.
Positively removes dirt and scale.
Expansion valve operates more efficiently.
Capacities of 1/6 hp. up to 60 tons.
TEMPRITE PRODUCTS CORP.
43 PIQUETTE AVE. • DETROIT 2, MICHIGAN

MARSH
Pressure Gauges
Dial Thermometers
★The gauge with the Recalibrator
Ask for this New Refrigeration Booklet
JAS. P. MARSH CORP.
2061 Southport Ave., Chicago 14, Ill.

What Was Seen at Western Refrigeration Industry Show

These descriptions of the exhibits at the first Western Refrigeration Industry Exposition were written by C. Dale Mericle, associate editor of the NEWS, who covered the show.

Frigidaire's "Viso-Trainer" and "Thermo-Tester" drew throngs of interested refrigeration men (and their wives). "Thermo-Tester" is new device for testing thermostatic controls.

* * *

'Thermo-Tester' Allows Quick Testing of Switch Setting

Center of the big display put on by the Frigidaire Sales Corp. of Los Angeles and Oakland was a multiplexed Viso-Trainer, but much interest was also shown in a new product—the "Thermo-Tester," which is designed to permit quick testing of the thermostatic switch setting.

The Thermo-Tester consists of a 1-in. tube fitted with a ¾-in. tube inside (overall length 4½ in.) providing a well in which to place the bulbs of the thermostatic switch and a thermometer. On the side of the tester is a flare connection fitted with an adjustable needle valve.

To use, the tester is first connected to a "Freon-12" service drum, and the well of the tester filled with alcohol. Bulbs of a thermometer and the thermostatic switch are immersed in the alcohol in the well. The needle valve is open to allow refrigerant to flow between the inner and outer shells of the tester, the gas escaping to the atmosphere through a baffled opening on the opposite side from the refrigerant inlet.

Rapid cooling of the alcohol permits the switch to be tested in approximately 15 minutes instead of the usual hour or more, it is claimed.

Besides the Thermo-Tester and Viso-Trainer, Frigidaire also displayed various valves and fittings, a "tear-down" version of an ice cream cabinet to demonstrate that the low side can be removed if repairs are necessary; a cut-away Meter-Miser unit, and two refrigerators—the new AJ6 apartment house model and a ColdWall.

'Vita-Vision' Wins Attention At Frigid-Freeze Display

A 20-cu. ft. Frigid-Freeze frozen food dispenser with the "Vita-Vision" superstructure was an attention-getter in the display of Refrigeration Corp. of America, which was put on by the Los Angeles and San Francisco branches of the company.

In an animated display the company showed its plans to bring out 6 and 12-cu. ft. frozen food dispensers featuring the Vita-Vision display which are intended chiefly for "spot merchandising" of frozen foods in traffic corners of both stores and markets.

Three chest-type Frigid-Freeze farm freezers of 6, 12, and 20-cu. ft. capacities were also on display along with a 160-cu. ft. metal-clad walk-in box for 0° F. storage. Made also in sizes up to 730 cu. ft., this unit features the Thermobank defrosting system and sectional, knock-down construction.

A. P. Harris, head of the International Coil Co. of Los Angeles, and his "Circulair" blower coil.

* * *

International Coil Blower Features Easy Servicing

Ease of servicing was one of the chief features claimed for the "Circulair" blower unit displayed at the show by the International Coil Co. of Los Angeles.

Intake grille of this circular type coil is an aluminum casting on which are mounted the motor and fan. Three wing nuts hold this assembly in the center of the unit, permitting it to be easily removed for oiling the fan motor, repairing motor, or adjusting thermostatic bulb.

Location of the thermostatic bulb is pre-determined and equipped with a quick-fastening wing-nut clamp. Any standard type expansion valve may be used with the coil, the valve location being outside of the coil housing for ease of installation, adjustment, and repair.

A combination heat exchanger and accumulator is also included in the coil, which is designed primarily for ceiling mounting.

Universal Ref. Co. Shows Three 'Freezmaster' Models

A 17½-cu. ft. "Freezmaster" frozen food display case was featured in the booth of Universal Refrigeration Co. of Los Angeles. This model, made also in 20 and 22-cu. ft. sizes, has a fluorescent-lighted, mirrored superstructure and sliding glass lids.

The lids are of double pane construction with silica gel between to prevent fogging. Frames of the glass lids can be easily removed to renew the silica gel, it is claimed.

Rounding out the display were an 8-cu. ft. frozen food case and a 20-cu. ft. two-temperature box. Top section has an across-the-top door for the freezing or frozen food storage section, while lower section is of standard temperature and is fitted with two doors. This "Freezmaster" unit is also made in a 40-cu. ft. model.

Imperial Brass Uses Smoke To Stop Passing Traffic

"Torpedo" dehydrators, "Dia-Seal" in-line hand valves, and tubing service tools for cutting, flaring, bending, etc., were on display at the booth of Imperial Brass Mfg. Co. of Chicago.

As a "traffic-stopper" Imperial featured a smoke test for its "Micronic" filtering element employed in its dehydrator line. Visitors were invited to blow smoke through the filter to demonstrate the uniformity of flow through the filter orifices.

22-cu. ft. Reach In for Home Spotlighted by U. S. Grant

U. S. Grant Supply Co. of Los Angeles, distributor, displayed several makes and products of commercial equipment. Shown was a 22-cu. ft. "Modern" reach-in now being sold chiefly for use in homes. A large ice-making evaporator coil can be utilized for considerable frozen food storage.

Another "Modern" refrigerator shown was a four-door 40-cu. ft. reach-in fitted with two "Innerfreeze" units providing low temperature storage for frozen foods in two of the refrigerator's four compartments.

American 8 and 15-cu. ft. chest-type home freezers were on the floor here, along with a 20-cu. ft. Ideal "Speedfreeze" freezer, a Pelco beverage cooler, Copeland water cooler, Tecumseh ⅕-hp. hermetic units, and Victron fans.

2-Temp 'Colduet' Reach-In Makes Bow to Industry

Making its bow to the refrigeration industry at the western show was a brand new two-temperature reach-in produced under the name "Colduet" by the Coldew Corp. of South Gate, Calif.

This self-contained two-door refrigerator provides 11 cu. ft. of standard temperature storage space plus 9 cu. ft. of low temperature storage ranging between -18° and 10° F. Included is a 2-cu. ft. refrigerated utility drawer in the lower section of the unit beside the machine compartment. The company claims to be first commercial refrigerator manufacturer to incorporate a utility drawer "in space that is usually wasted."

Besides this model, the Coldew Corp. also featured a 47-cu. ft. three-door self-contained reach-in having two utility drawers and glass doors, and a 40-cu. ft. four-door reach-in for remote installation.

Recently the Coldew Corp. made a downward adjustment on prices of its line following a 20% price boost on Feb. 1. The company's 250 dealers have been given credit for the resulting price difference on items purchased between the Feb. 1 price increase and the subsequent adjustment, according to statements by company officials.

Carl Olin, western manager for Servel, Inc., discusses a Servel unit with L. O. Thomas of Western Refrigeration, P. B. Reed of Perfex Corp., and L. E. Thomas of Thomas Refrigeration Service, Salinas, Calif.

* * *

Servel Highlights Two Compressors In Operation

Two operating cut-away Supermetic compressors were highlighted in the booth display put on by the western branch of Servel, Inc.'s Electric Refrigeration Division, headed by Carl Olin, western manager.

One cut-away was a 6-cylinder 1½-hp. compressor; the other was a ⅓-hp. 2-cylinder model with a plastic dome.

Back of the booth was devoted to an exploded display of the parts comprising the Supermetic compressor.

Griswold, Inventor Exhibits Snap-On Valve Connections

Male and female snap-on service connections were shown for the first time by their inventor, J. G. Griswold of San Diego. The fittings have an over-center lever which compresses a neoprene gasket into the threads of fittings for rapid connection or disconnection.

Connectors are intended to be used with pressure gauges, refrigerant cylinders, and any other application where a quick, non-permanent connection is desirable.

Cut-Away Sunroc 10-Gallon Water Coolers Are Shown

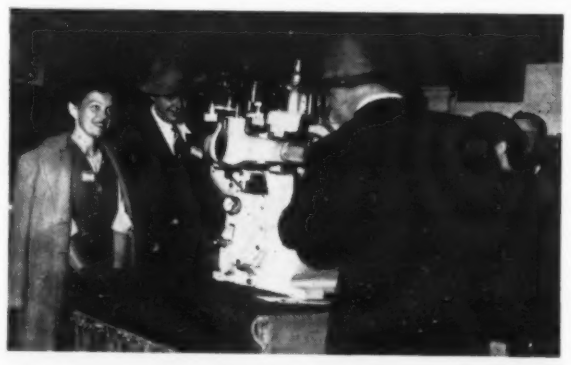
Three 10-gallon-per-hour drinking water coolers comprised the display put on by the Los Angeles branch of Sunroc Refrigeration Co., with headquarters in Glen Riddle, Pa.

Both hermetic and open-type units were on display, two of the three models having their wrappers removed.

40-Ton Worthington Unit Has Controlled Capacity

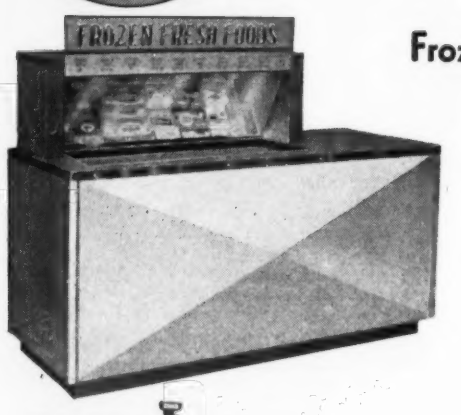
Center spot in the booth of Worthington Pump & Machinery Co. was occupied by a cutaway model of the company's 40-ton, 6-cylinder "Freon-12" compressor, model 4HF6. This model features an unloading arrangement whereby capacity can be controlled for operation at 25%, 50%, or 75% of full capacity.

Worthington's new 3-ton self-contained, water-cooled air conditioner was also shown.

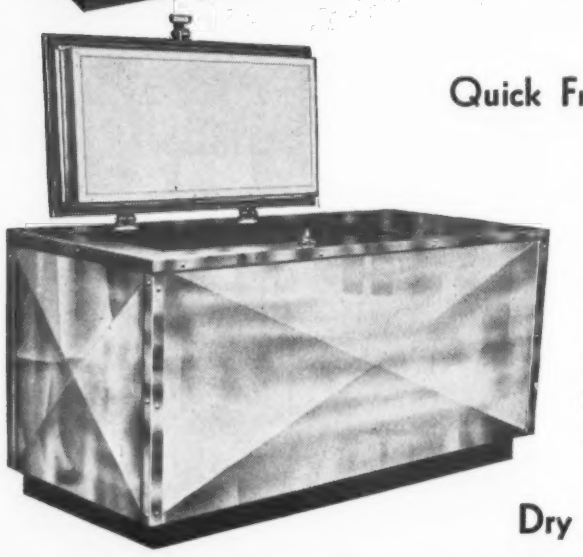


Mr. and Mrs. Edward C. Hubkey of Long Beach inspect the 40-ton cutaway compressor shown by Worthington Pump & Machinery Corp.

MARVEL QUALITY LINE of Refrigeration

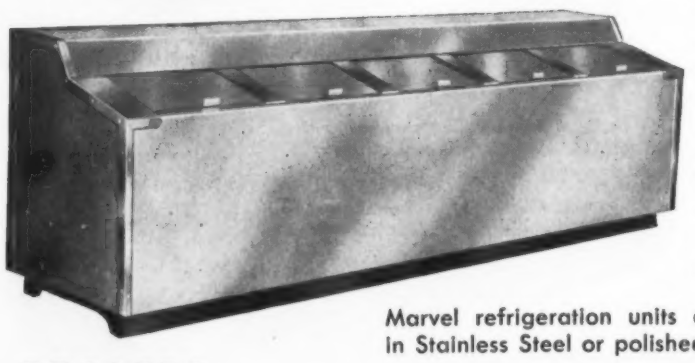


Frozen Foods Salesman
Shows them and sells them while maintaining proper temperature. Capacity 11.8 cu. ft. 5-in. Fiberglas insulation. Has heavy duty ¼ H.P. compressor. Main box is 6 ft. by 29½ in., 39 in. high.



Quick Freeze Locker
34 in. high, 72 in. long, 30 in. wide. 12 cu. ft. capacity. Large lid, 23x45. ¼ HP compressor. Range from 15° below zero to 3° above. 5 in. insulation.

Dry Beverage Cooler
39 in. high, 30 in. wide, 6, 8, or 10 ft. long. Lids slide away or lift out. Removable dividers. 8-in. utility shelf.

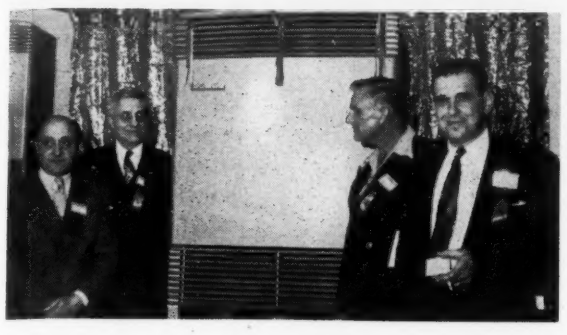


Marvel refrigeration units are finished in Stainless Steel or polished Aluminum.

DEALERS WANTED
Write, wire or phone today for information on franchise.

Immediate Delivery!
W. ALLEN ROGERS Industries
BOX 272-AC DEMOPOLIS, ALA.

Highlights of Western Show....



I. R. Allen of Royal Refrigeration Co., Gemco distributor; E. Gygax, chief engineer for Gemco, and W. Y. Beyers and Dan Kittel, both of Compton, Calif., and one of the Gemco air conditioners displayed.

* * *

Gemco, Warren, Jordon Lines Accented by Royal Ref. Co.

Distributor for the Gemco air conditioner line and the commercial refrigeration products of Warren and Jordon, the Royal Refrigeration Co. of Los Angeles put on an extensive display of these products.

A fully operating Gemo 5-ton packaged conditioner featuring its two-stage radial compressor and water-cooled condenser was being shown, along with a cutaway model of the 5-ton compressor. E. Gygax, chief engineer of Gemco, was on hand to discuss its operation.

In the commercial refrigeration section of its display Royal featured both Warren and Jordon equipment.

The Warren products included a 10-ft. self-contained, double-duty meat case; an 8-ft. open self-service frozen food case with plate dividers and mirrored superstructure for remote unit installation; a 50 cu. ft. double-duty, upright dairy case with vertical sliding doors (it's also made in black finish for florist use); and a 3-door, 40 cu. ft. self-contained reach-in.

Jordon equipment shown included the 24-cu. ft. self-contained frozen food case featuring a mirrored superstructure; a double-duty all-stainless steel 6-ft. "low boy" meat case; and the company's beverage cooler.

The Royal firm distributes Warren in California, Arizona, Oregon, and Washington, while the Jordon franchise covered southern California and Arizona.

Viking Sales Corp. Pushes 6 'Ward Monterey' Boxes

Six commercial refrigerators of various types made by the Ward Refrigerator & Mfg. Co. of Los Angeles and sold under the name "Ward Monterey" were shown by Viking Sales Corp., also of Los Angeles, distributor for the line.

There was a 32-cu. ft. four-door reach-in of self-contained design with glass doors; a deluxe 40-cu. ft. four-door reach-in with glass doors for self-contained installations; a three-door 60-cu. ft. reach-in; an eight-door 83-cu. ft. reach-in with glass doors; a four-door 40-cu. ft. reach-in, and a four-door 62-cu. ft. bakery box or dough retarder.

All models shown were finished in white and have 3 in. of insulation. Condensing units likewise can be installed in all the models on display.

Frostair Refrigerator Shown By Tire Firm

The two-temperature, two-condensing unit Frostair household refrigerator produced by the General Tire Co. and Liquid Carbonic Corp. attracted the public. R.S.E.S. members were guests at the booth of the Richardson Tire Co., Frostair distributor in the Long Beach area.

One of the two condensing units refrigerated the 3.5-cu. ft. 0° F. frozen food storage compartment, the other unit supplying the 7-cu. ft. normal temperature refrigerator section.

168-cu. ft. Beall Frozen Food Locker Can Be Taken Apart

Two big Beall frozen food lockers—an 168-cu. ft. walk-in and a 48-cu. ft. freezer-storage unit—were displayed by Wilkins Distributing Co., Inc., of Los Angeles.

The 168-ft. Beall model includes a separate freezing chamber held at 0° F. providing 48 cu. ft. of frozen food space, plus 120 cu. ft. of standard temperature storage. The unit is of all-aluminum construction and is built in sections which can be easily assembled or taken apart, it is claimed.

Freezer section is equipped with four plates, while the standard temperature compartment is cooled with a blower coil.

Similar construction and design features are found in the 48-ft. upright model, which has one full-length door and three inner doors opening to shelves. This model is aimed at the average home, the company says.

Super-Freeze Exhibits Home 'Food Savings Bank'

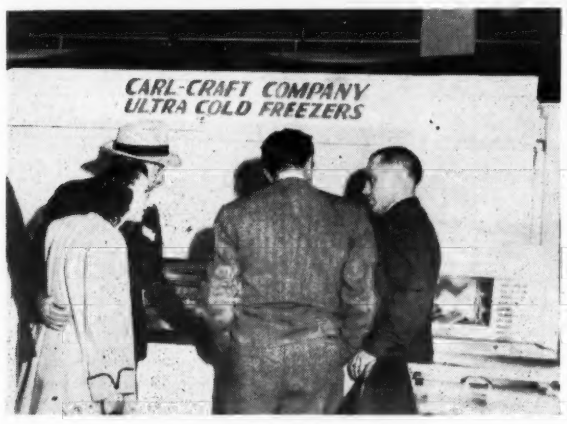
A frozen food merchandising cabinet and a home freezer were on display at the booth of Super-Freeze Co., Los Angeles distributor for Fogel, Haldorf Mfg. Co. (Philadelphia), and Watkins & Quatman (Holland, Michigan and Lima, Ohio).

The Haldorf frozen food dispenser shown was an 18-cu. ft. self-contained model which measures 6 ft., 8 in. in length.

This features a fluorescent-lighted mirrored superstructure, sliding "Twindow" glass lids, and a one-piece stainless steel top.

Designed particularly for kitchen installation, the "Food Saving Bank" home freezer of Watkins & Quatman is a chest-type unit measuring 36 in. high by 25 in. deep, by 29 in. in length. It is powered by a ⅛-hp. "Freon-12" unit.

Additional stories about exhibits at the First Western Refrigeration Industry Exposition will be found on page 29 of this issue of the NEWS.



Mr. and Mrs. Charles L. Rusten, M. B. Willis, and J. D. Edwards concentrate on the story of a frozen food display case at the Carl-Craft Co. exhibit.

* * *

'Ultra-Cold' FF Dispensers Have No-Frost, Sliding Lids

"Ultra-Cold" frozen food dispensing cases featuring "continuous flow refrigeration" were shown at the booth of Carl-Craft Co., Los Angeles manufacturer.

Models displayed included a 22-cu. ft. dispenser with superstructure, an 18-cu. ft. case of similar design, and a 12-cu. ft. model without the superstructure.

Full-view mirror and price rack are included in the fluorescent-lighted superstructure, the cabinet having a stainless steel top and white enamel sides.

A special feature of the line are Lucite sliding lids which have been vacuum-sealed and cold welded, providing 100% vision without frosting, the company claims.

Thirty models ranging from 6 to 32 cu. ft. comprise the company's full line.

Emerson Haverty of Redlands, Calif., "Rudy" Rudisil, Refrigeration Supplies Distributor Co., and Geo. H. Nelson, Los Angeles representative for Metrex Valve Co., check over the new Metrex shell-and-coil condenser.

* * *

Nelson Shows Production Sample of Metrex Condenser

A production sample of a new shell and coil condenser produced by the Metrex Valve Co. of Franklin Park, Ill., was included in the featured items shown at the booth of the George H. Nelson Sales Co. (Los Angeles), manufacturers' representative for both Metrex and Perfection Refrigeration Parts.

The new condenser is similar in construction to a large, flange-type dehydrator and strainer, permitting easy removal of the head and coil as a complete assembly for repairs or replacements.

Other Metrex products on display were dehydrators, strainers, and compressor shut-off valves.

6 Models In Beer, Beverage Line Displayed By Neilson

Manufacturer of dry beverage coolers and beer-dispensing equipment, the Neilson Equipment Co. of Los Angeles had six models of its line on display.

Beer dispensers displayed included a four-keg unit with four direct-draw dispensers; a three-keg unit with three dispensers, and a two-keg, two-dispenser model. In addition there was a precooler which has a two-keg capacity for beer in the lower section and refrigerated space at the top for dry bottle cooling.

Largest model of the Neilson dry beverage cooler, 8-ft. long, was also on display.

Both the beer dispensers and beverage coolers are designed for remote or self-contained installation of condensing unit. When self-contained, the condensing unit can be connected at either end of the cases.

Kurt Rose, Mfrs. Agent, Covers Models from 5 Firms

Representing Superior Valve & Fittings Co., Polar Hardware, Airserco, Inc., All-Steel-Equip Co., and Joliet Chemicals Co., Kurt W. Rose, manufacturers' agent; put on a representative display of these lines in his booth. Among the featured items were Superior's new in-line valves as well as the Superior heat exchanger.

Considerable interest was shown in the Airserco expansion valve tester.

Rainbault Co. Spotlights Trade-Mark of Ebco Mfg.

Oasis bottle water coolers and 10-gal. and 20-gal. pressure water coolers, two being in operation, were shown by the John P. Rainbault Co. of San Francisco, factory representative for the Ebco Mfg. Co.

The Rainbault display theme was the Ebco trade-mark.

How Avery Engineering Co., a Major Contractor, 'Systematized' Its Operations

CLEVELAND—Avery Engineering Co. here, one of the nation's top air conditioning and refrigeration contractors, is a model of "systematized" operation in a field which has been thought by some who operate in it, not to lend itself to much "systematizing."

"Some of the problems current with the times have served to force us into adopting more 'system' to our operations," says Les Avery, head of the firm.

He cites as an example the problem of material shortages, which resulted in the purchasing of parts and supplies in whatever quantities might be available, because of the fact that experience demonstrated that a job might be held up indefinitely for the lack of some small essential part—that often was just not available when it was needed.

"Buying in this manner was probably a necessary expedient," said Mr. Avery, "but I got the feeling after awhile that we were buying and piling up inventories without knowing what we had or what we really did need."

So he hired a man to set up a perpetual inventory record on a "cardex" type of system which shows not only—

(1) how many of each piece of equipment or part is in stock, but also

(2) what the advance requirements are as indicated by a tabulation of predicted requirements for a particular contract which Avery Engineering has taken (these requirements are recorded on a separate card).

LESTER T. AVERY

* * *

Head of the Avery Engineering Co. of Cleveland, he has put "system" into his refrigeration and air conditioning contracting business.

The two types of cards used in this stock-record system are shown in accompanying illustrations. Note that the stock record card, used in this particular example illustrated for a certain size and type of copper tubing, has the following essential information:

(1) Name of the supplier (vendor) who is identified by the number of the line on which the supplier's name is written, when the order is recorded on the card.

(2) The stock bin locations.

(3) The ordering point.

(4) Inventory at the start of the month.

(5) Amount of material on order (by order number).

(6) Material as received.

(7) Material as issued (by contract number).

(8) The balance in stock.

The Requirements Record card, also illustrated, records the amount of a certain type of part or material that will be needed for a particular contract. This information is put into the Requirements Record just as soon as an estimate can be made on the materials requirement for the contract.

"To set up and maintain this type of a perpetual inventory record means that we have added another item to our cost of operation," commented Mr. Avery, "but there is some evidence that we may more than recover this cost by cutting losses from unusable inventories and by elimination of delays in completing our contracts because of the failure of having the supply of all needed materials on hand."

To Find Quickly Inventory of Materials & Parts

An Avery company employe enters some figures into the "perpetual inventory" record. The records in these drawers of cards, easy to use and to see, make it possible for those in the company to determine at once just how they stand on any part or material.

These inventory card records are kept on all large equipment items, all major service parts and supplies, and major items of contract materials. An effort was made to keep a perpetual inventory on fittings, but this was found too difficult for the amount of money involved, so the conventional bin basis is now used.

Another example of the type of system which makes the Avery Engineering Co. a smooth-flowing operation in which a minimum of time is

(Continued on next page)

STOCK RECORD In Perpetual Inventory System

The Avery Eng. Co. STOCK RECORD

1 VENDOR CHASE BRASS
2 AMER. RAD. & STD. SAN.
3 KENNEDY
4

BIN LOCATIONS R-17

ORDERING POINT 200 MAX ORDER

DATE	REFERENCE	ON ORDER	RECEIPTS	COST PRICE	RET'D	BAL. ON ORD.	ISSUED	BAL. IN STOCK
7/1/46	INV.							120 FT.
7/9/46	17306 (1)	200				200		120
7/10/46	C-1170						40	80
8/1/46	C-1210						60	20
8/7/46	17306 (1)		200	29.16-C (1)		0		220
9/1/46	C-1227						80	140
9/15/46	18010 (2)	400				400		140
10/1/46	C-1380						40	100
10/9/46	18010 (2)		400	29.17-C (2)		0		500
11/10/46	C-1215						110	390
1/10/47	C-1310						100	290
1/10/47	18791 (1)	200				200		290
2/15/47	C-1316						50	240

DESCRIPTION

Tubing - Copper - Type K 1-1/8" O.D.

This is an actual sample of a "Stock Record" card. The "balance in stock" column at the far right provides the information on just how much is on hand. The "on order" information shows how much of the material has been ordered. In the "reference" column the numbers in parenthesis refer to suppliers.

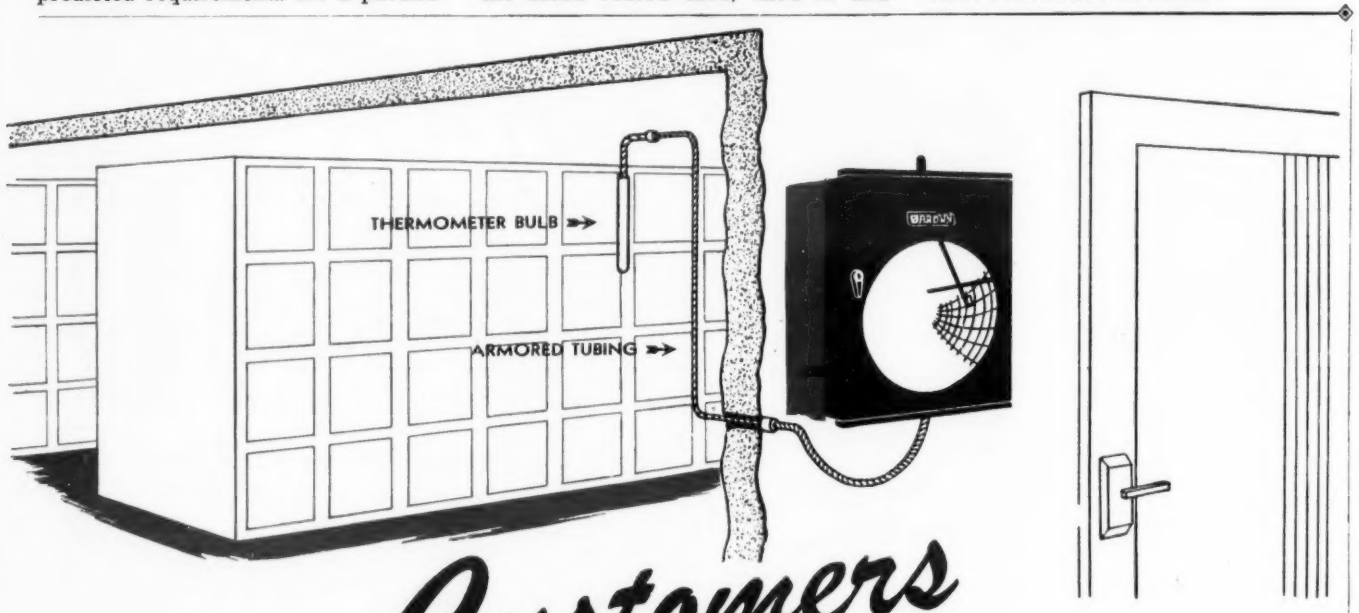
REQUIREMENTS RECORD Is a Vital Part

AVERY ENGINEERING COMPANY — REQUIREMENTS RECORD

Tubing - Copper - Type K - 1-1/8" OD

JAN				FEB				MAR				APRIL				MAY				JUNE			
REF	IN	OUT	BAL	REF	IN	OUT	BAL	REF	IN	OUT	BAL	REF	IN	OUT	BAL	REF	IN	OUT	BAL	REF	IN	OUT	BAL
C-1310	100		100	C-1316	50		50																
C-1310		100	0	C-1340	100		150																
				C-1410	70		220																
				C-1316		50	170																

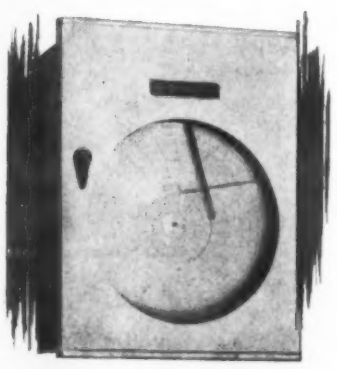
The "Requirements Record" is an important adjunct to the "Stock Record." When a contract is taken, the estimated amount of a particular part or material is entered in the "Requirements Record" and when a certain amount of material is taken out of stock, another entry is made on the "Requirements Record" card.



YOUR Customers AND YOUR Plant NEED HONEYWELL

AUTOMATIC TEMPERATURE RECORDER!

LOCKER PLANT operators need the Honeywell Automatic Temperature Recorder to safeguard profits, for protection against food spoilage, sustain customer satisfaction and promote efficient operation.



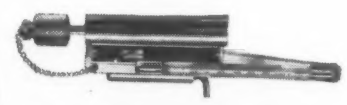
Your customers need its service, too, for the assurance that their foods are kept at safe temperatures, which will promote their continuing patronage. The recording instrument is placed at eye-level, outside the freezer room, affording a constant check of your locker plant temperatures.

Each disc-chart records a continuous week's temperature with a range of —30° to +70° F. The discs can be permanently filed for positive proof in the event of claims regarding food spoilage.

Ask your contractor or jobber for complete information about this new Honeywell refrigeration control, or write Minneapolis-Honeywell Regulator Company, 2659 Fourth Avenue South, Minneapolis 8, Minnesota. Branches and distributing offices in all principal cities.

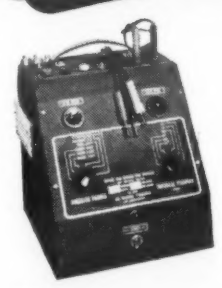
MINNEAPOLIS Honeywell CONTROL SYSTEMS

AIRSERCO Short cuts for the service engineer



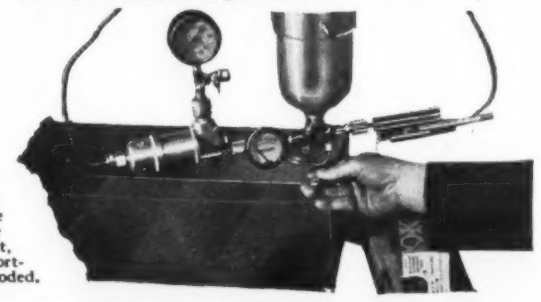
THERMOSTATIC CONTROL TESTER

Model 3100 — A precision pocket-size Tester that detects and analyzes thermostat defects without removing the control from the cabinet. Saves blind tampering with thermo controls.



ANALYZER — A "must" service instrument that starts up defective compressor units without tearing apart the motor assembly. Starts both hermetic and open-type units up to ½ h. p. under actual working conditions — and may be left on the job for emergency service 56 starting combinations.

VALVE ANALYZER — A revolutionary time-saving instrument that tests and sets the superheat requirements for *all* types of Thermostatic Expansion Valves. Provides laboratory accuracy on the job—eliminates all guesswork.



STEEL TANK HOLDERS

Facilitate the SAFE transfer of refrigerants in the shop and on the job. Lightweight, free-standing, portable, and color coded.

SEND FOR CATALOG A-47

AIRSERCO MANUFACTURING CO., INC.
435 MELWOOD ST., PITTSBURGH 13, PA.

EXPORT OFFICE: Melchior, Armstrong, Dessau Co., Ridgefield, N. J.

BRANCH OFFICES: Boston, New York, St. Louis, Cleveland, Knoxville, Minneapolis, Los Angeles

Avery Servicemen Have 'Standard Supply' of Tools and Parts When They Start for Job

(Continued from preceding page)

lost in scrambling around for the essentials with which to do the job, is the use of "job bins."

These "job bins" are labeled with the contract number for any particular contract on which the Avery company will work, and all the parts and pieces for the contract (except the big stuff) are marked with the contract number and placed in the bin.

Thus, when the men go out on the job in question, the necessary materials are all in one easily found place.

The "job bins" have their own special separate location in the basement of the Avery establishment, as do the regular stock bins, and the warehouse space for the "merchandise" items which Avery handles, and some of the bigger items as may be in stock, such as condensing units.

When the refrigeration servicemen of the Avery organization set out for the day's work, they don't just pick up whatever parts and tools they might guess would be needed on the job.

Instead, they pick up the standard tool box and service box, which are fitted out with what might be termed a "scientifically selected" list of tools, fittings, and parts.

Lists of the items in the tool and service boxes are published in tabular form for the benefit of those readers who might wish to try something along the same lines. Servicemen for the Avery company, of course, handle only commercial and industrial type installations.

On the "Daily Time & Material Service Report" (illustrated) there is a space for the serviceman to note the type of parts used, and the quantity. The individual serviceman must bring back an old part whenever he replaces it with a new part.

The Avery Co., primarily a contractor specializing in all types of refrigeration and air conditioning installations, has been gradually expanding what Mr. Avery calls its "merchandise line." Items now carried and sold by the "merchandising department" of the organization includes water coolers, home freezers, small air conditioning units, and the "Koolshade" sun screen.

(Continued on next page)

Parts Carried In Servicemen's Supply Box

Flare Nuts Std.		**Reducing Nuts**		**½ Union Elbow**		**Brass Pipe Plug**	
¼"	2	Flare—Tube Size		Flare to MPT		⅛"	5
⅜"	2	⅜" x ¼"	2	¼" x ⅛"	2	¼"	5
½"	2	½" x ⅜"	2	¼" x ¼"	2	⅜"	5
⅝"	2	**Female Couplings**		¼" x ⅜"	2	½"	5
¾"	2	Flare to FPS		⅜" x ⅛"	2	¾"	5
Flare Seal Bonnets		¼" x ⅛"	2	⅜" x ¼"	2	**Pipe Bush**	
¼"	3	¼" x ¼"	2	⅜" x ⅜"	2	¼" x ⅛"	2
⅜"	3	⅜" x ¼"	2	⅜" x ½"	2	⅜" x ¼"	2
½"	3	⅜" x ⅜"	2	½" x ¼"	2	½" x ¼"	2
⅝"	3	½" x ⅜"	2	½" x ⅜"	2	½" x ⅜"	2
¾"	3	½" x ½"	2	½" x ½"	2	¾" x ⅜"	2
Flare Gaskets		⅝" x ½"	2	⅝" x ½"	2	¾" x ½"	2
¼"	4	⅝" x ¾"	2	⅝" x ¾"	2	**Sweat Tee**	
⅜"	4	**Red. Couplings**		¾" x ½"	2	¼"	2
½"	4	M. Flare to M. Flare		¾" x ¾"	2	⅜"	2
⅝"	4	⅜" x ¼"	2	**Flare Tees**		½"	2
¾"	4	½" x ¼"	2	¼"	2	**Liquid Line Ind.**	
Half Unions		½" x ⅜"	2	⅜"	2	¼" Fl	2
Flare to MPT		⅝" x ⅜"	2	½"	2	⅜" Fl	2
¼" x ⅛"	2	⅝" x ½"	2	⅝"	2	½" Solder	1
¼" x ¼"	2	¾" x ½"	2	¾"	2	⅝" Solder	1
¼" x ⅜"	2	¾" x ⅝"	2	**Union Couplings**		⅞" Solder	1
⅜" x ⅛"	2	**Fittings Red.**		Flare to Flare		1⅛" Solder	1
⅜" x ¼"	2	M. Flare to F. Flare		¼"	5	1⅜" Solder	1
⅜" x ⅜"	2	⅜" x ¼"	2	⅜"	5	1⅝" Solder	1
⅜" x ½"	2	½" x ¼"	2	½"	5	**Dryers**	
½" x ¼"	2	¼" x ⅜"	2	⅝"	5	¼"	1
½" x ⅜"	2	½" x ⅜"	2	¾"	5	⅜"	1
½" x ½"	2	¼" x ½"	2	**Drum Adapters**		⅜"	1
⅝" x ¼"	2	⅜" x ½"	2	¾" x ¼"	2	½"	1
⅝" x ⅜"	2	⅝" x ½"	2	¾" x ⅜"	2	½"	1
⅝" x ½"	2	½" x ⅝"	2	Gaskets ¾"	4	SG-2 Sil. Gel Refills	3
⅝" x ¾"	2	¾" x ⅝"	2	**Swivel Nut Valve Conn.**		**Automatic Water Valves**	
¾" x ½"	2	⅝" x ¾"	2	¼"	2	⅜"	1
¾" x ½"		**Sweat Coupling**		⅜"	2	½"	1
Union Elbow		¼"	2	½"	2	¾"	1
Flare to Flare		⅜"	2	⅝"	2	**Exp. Valve**	
¼" x ¼"	2	½"	2	¾"	2	⅜" x ½"	1
⅜" x ⅜"	2	**Sweat Ells**		**Sweat Bushing**		⅜" x ⅝"	1
½" x ½"	2	¼"	2	¼" x ⅜"	2	¼" x ⅜"	1
⅝" x ⅝"	2	⅜"	2	⅜" x ½"	6		
¾" x ¾"	2	½"	2	½" x ⅝"	2		
				⅝" x ¾"	2		

Items for Tool Box of Man on the Job

Hack saw
Hack saw (midget)
Wood saw—8 Pt.
Sidecutter pliers—7"
Thin nose pliers
Combination pliers—10"
Ball pein hammer—16 oz.
Cold chisels—½"
Set screw wrenches—Blue Point
Socket wrenches—⅜" drive to 1" socket
Adapters—½" to ⅜"
Socket—1"
Open end wrenches
Set box wrenches—
7/16" x ⅜"
½" x 9/16"
⅝" x 11/16"
¾" x ⅞"
15/16" x 1"
Service ratchet wrench
Socket set—¼" drive
(3/16, 7/32, ¼, 9/32, 5/16, 11/32, ⅜, 7/16)
Pipe wrenches—10" and 14"
Wrenches—6", 8", 10", 12"
Flare nut wrenches
Center punch—⅜"
Screw drivers—8" blade, 4" blade, 2" blade
Screw drivers
Screw drivers (offset)
Files—8" mill, 12" mill.
Flare block
Tube cutters
Leak detector
MC handles
MC tank
Extension cord
Prestolite welding kit
Torch handle and tips
Regulator valve
Tank
Pump oil can—flexible spout
Set Easy Outs
Set drift pins
5/16" x 5/32"
⅜" x 3/16"
7/16" x 7/32"
Charging line
Gear puller
Keyhole saw
Sling
Pocket thermometers (2)
Drum "Freon"—25 lbs.
Drum methyl—20 lbs.
Fuse tester—110V-440V; low voltage

SAVE YOUR TIME
BUY BY MAIL

Pennsylvania dealer writes:

"I am very happy to recommend your company to others. All of my orders to you have received prompt and courteous attention.

"You have done your best in supplying us with scarce materials and parts."

Air Conditioning and Refrigeration

Parts - Tools - Supplies
Shop Equipment

Request Catalog on Your Letterhead

AIRO SUPPLY CO. INC.
SERVICE COVERS THE NATION
2732 N. ASHLAND CHICAGO 14, ILL.
Dept. B

AIR CONDITIONING
condensers and coolers designed and built FAST

We design, build, retube or rebuild quickly any unit with tubes, standard or special, for Freon, ammonia, CO2. Materials on hand for prompt delivery Emergency maintenance work 24 hours a day, anywhere.

Condenser Service & Engineering Co., Inc.
88 River Street, Hoboken, N. J.
Phone HOboken 3-4425. After 6 P. M. or Sundays, HOboken 3-4478

"One Shot and Sure Shot"
. . . SAYS MR. SPEAR

THAWZONE
PATENTED
The PIONEER FLUID DEHYDRANT

934 N. JACKSON STREET
DANVILLE, ILLINOIS
PHONE 4946

HARRY H. SPEAR
REFRIGERATION SERVICE ENGINEER

November 28, 1946

Highside Chemicals Company
195 Verona Avenue
Newark 4, New Jersey

Attention: Mr. L. V. Gardner

Dear Mr. Gardner:

I started using Thawzone exclusively six years ago and since then have never used a dryer (except on SO_2) in any service or installation work. I always install a new strainer, put in Thawzone, and then go away and forget it. Thawzone is a one-shot and sure-shot proposition with us. When you service and install 75 miles from the shop, you must have something that is positive in action.

Some time ago I installed an F12 locker plant (20 H.P.) and used some old 1-1/4" iron pipe coils. These were cleaned and washed in carbon tet, and then, to be on the safe side, I put two quarts of Thawzone into the 500# of Freon This job has given us no trouble at all from freeze-ups We also added 1-1/2 quarts of TRACE at the same time

Every new job has Thawzone applied directly into the receiver and strainer, as I have yet to see any such equipment in which every piece is absolutely dry On service jobs we inject Thawzone into both the strainer and crankcase. I have never had any adverse conditions arise in any system from the use of Thawzone. We cannot praise Thawzone enough and you may call on us for a reference any time.

Sincerely,
Harry H Spear

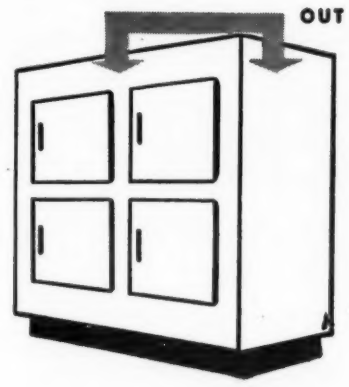
HHS:A

HIGHSIDE CHEMICALS CO.
195 VERONA AVE. NEWARK 4, N. J.

curved

FOR COMPACTNESS
CONVENIENCE
CAPACITY

OUT OF THE WAY LOCATION—FRONT, BACK OR END



THE KRAMER CURVETTE

Notice the compactness. Motor and fan are conveniently located out of the way within the curve of the surrounding semi-circular coil bank. No space is wasted.

Cooling capacity is increased by high ratio of prime to secondary surface. Air is uniformly distributed along straight radial lines.

Because of its compact proportions and small size, unit can be conveniently located in unused corner of refrigerator. The entire unit combines a maximum of cooling capacity in a minimum of space.

AN IDEAL UNIT FOR REFRIGERATED CABINETS AND COUNTERS

Units now available for prompt shipment. Cost is low.

KRAMER TRENTON CO. TRENTON 5, NEW JERSEY

Members of the Refrigeration Equipment Wholesalers Association

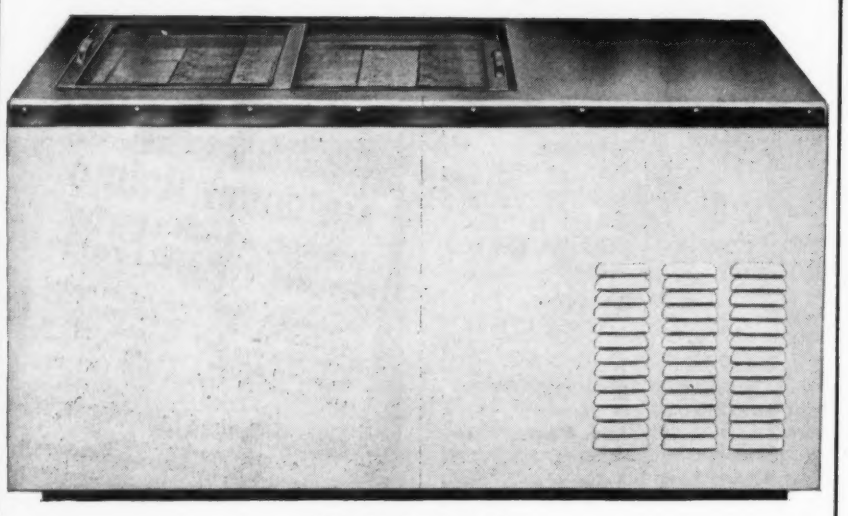
Your refrigeration parts and supply house in Central New York and Northern Pennsylvania

CENTRAL SERVICE SUPPLY

647 S. Warren Street, Syracuse, N. Y. Phone 5-4000 & 3-0313
209-211 Jefferson Ave., Scranton, Pa. Phone 3-4000

Here it is!

The SENSATION of 1947



Model 510 A

Check these Features!

- 2 THERMOPANE SLIDING GLASS DOORS
- POLISHED STAINLESS STEEL TOP
- BUILT-IN 4 WALL REFRIGERATION
- ALL WELDED HEAVY GAUGE STEEL CONSTRUCTION
- HYDROLEENED FOR VAPOR SEAL

This 10 cubic foot all welded steel self service frozen food display cabinet is designed to meet the needs of the average store.

This self-contained, smartly styled, and superbly built cabinet eliminates the problems of:

Lack of space
Fear of overstocking
Fear of investing too much

FLEISCHMAN FREEZER CO., Inc.
275 East 140th St., Bronx 51, N. Y.

Each 'Contract Team' Handles a Special Type of Installation

(Continued from preceding page)

The company's installation contracts are handled—in an organizational innovation—by what are known as "contract teams." There are four teams, one for each of the following divisions of the installation contract work:

(1) Straight commercial installations.
(2) "Package" air conditioning installations.
(3) Large air conditioning jobs, not of the industrial type.
(4) Industrial air conditioning.

The team "captain" is the project engineer. Other key members of the team include:

One estimator (who may also act as the "purchasing agent").

One testing engineer.

Two draftsmen who design and lay out the job.

A construction superintendent.

A secretary-stenographer who handles the necessary correspondence, keeps some of the records on the job, and who may do at least part of the purchasing.

"It's up to these teams to estimate, design, purchase materials for, install, and test the jobs which they are given to handle," says Mr. Avery.

"The 'team' type of organization has a number of advantages, to our way of thinking, among which are the delegating of responsibility for the job to the teams, and the fact that it serves to make them 'specialists' on a particular type of contract."

The manner in which the quarters which the company occupies has been utilized reveals samples of the same type of thorough thinking and planning that characterizes the manner in which the business is organized and operated.

A two-story building, long and narrow in shape, the building has a 40-ft. front and is around 185 ft. deep. Front part of the building is devoted to showroom space for the merchandise items. Here also are the desks of the telephone operator and the receptionist. The latter also functions as the showroom floor sales clerk and demonstrator.

Back of the showroom are a series of glass-enclosed offices on either side of a center aisle. These offices are for the executive, sales, engineering, and clerical personnel.

"We have found the glass-enclosed

(Concluded on next page)

Forms Used for Service and Construction Charges

AVERY ENGINEERING CO.
1906 EUCLID AVENUE CHerry 1316
CLEVELAND 15, OHIO

BRANCHES
Akron
Dayton
Columbus

S. O. No. _____

DAILY TIME & MATERIAL SERVICE REPORT

Job Name _____ Original Contract No. _____ Date _____
Address _____ Phone No. _____
Bill to _____
Authorized by _____
Compressor Model _____ Make _____ Serial No. _____
Work Done _____

Recommendation to Customer _____

Parts and Materials Used			
Quantity	Part Name and Number	Cost	Sale Price

Time Started _____
Time Stopped _____
Total Hours (Includes Traveling) _____
Mileage _____
Hotel _____ Meals _____
Train _____
Other Expense _____

Is Job Completed _____
Customer's Signature _____
Service Man _____
Date Work Done _____

For Home Office Use Only
Charge to _____
Approved _____
Entered _____

Original — Permanent Billing Record

This is the company's copy of the "Time & Material Service Report." Note the section for "Parts and Material Used" and the other notations such as "Recommendation to Customer" and "Is Job Completed" which makes this a complete report.

Construction Contract Time Sheet

AVERY ENGINEERING CO.
1906 EUCLID AVENUE CHerry 1316
CLEVELAND 15, OHIO

For Week Ending _____ 194__

Employee's Name _____ Address _____
Job Name _____ Location _____
Charge to _____ Approved for Charge _____

Date	DESCRIPTION OF WORK	TIME STARTED	TIME STOPPED	STRAIGHT TIME	TRAVELING TIME	OVERTIME	MILES	OTHER EXPENSE
	Total							

No. of days worked _____ Total actual hours worked _____ straight time.
Total of actual overtime hours _____
Rate _____ per _____ Total Compensation _____
Employee's Social Security Account No. _____

Received the above amount in full payment for services rendered to date:

Signed _____

Above is the "Construction Contract Time Sheet" used by the Avery organization of work done on refrigeration and air conditioning contracts.

SINCE 1939•••ZEROSAFE by WILSON

WILSON ZEROSAFE FARM FREEZER
Sectional Model FF-60

THE GREAT NAME IN FREEZER DESIGN

SINCE 1939 Wilson ZEROSAFE has been the greatest reach-in farm freezer in America... THE NEW WILSON ZEROSAFE IS NOW GREATER THAN EVER BEFORE . . . Not a toy, but big, ruggedly beautiful, efficient, with stamina for years of low-cost operation.

SIZES FOR EVERY NEED FROM 15 TO 120 CU. FT.

FOR FRANCHISE INFORMATION ADDRESS DEPT. II: WILSON REFRIGERATION, INC., SMYRNA, DELAWARE

This is it! The perfect

DRY BEVERAGE COOLER

Remote or Portable Models

It's a MIRACOOL REFRIGERATOR

Compressor compartment is detachable so that you need not stock both models.

Very attractive with all stainless steel top and doors. Body finished in GREY or BROWN baked-on wrinkle.

FOUR DESIRABLE SIZES —TWO COMPLETE WITH UNITS

10 days delivery

Write for folder on this and our great line of

WALK-IN COOLERS

The CLEVELAND REFRIGERATOR CO.
2901 East 65th St., Cleveland 4, Ohio

Contractor's Offices Provide Fine Working Conditions & Demonstrate Equipment

Part of the showroom and reception room in the Avery quarters. The company is gradually building up a display of its "merchandise" items in this section, and the receptionist also acts as the attendant on the showroom floor. Glass-enclosed offices lining both sides of a central corridor have numerous advantages, Avery says (see story).

The drafting room in the Avery establishment has no windows, but nevertheless the low-ceilinged, perfectly air conditioned, specially lighted room provides ideal conditions for the draftsmen. Various types of air conditioning systems are employed throughout the Avery quarters, so that prospects can be given a demonstration of the various types.

Avery Has Own Classes on Sales, Service

(Concluded from preceding page)

offices to be time-savers," comments Avery. "When you want to know if someone else in the organization is in the office, it's a lot easier just to swing around in your chair and *see* if he is there, rather than to call him, send a messenger, or get up and walk down to his office."

All offices are air conditioned, which one would expect, since the Avery company would naturally have to "practice what it preaches." *But* the air conditioning was designed to provide Avery with the maximum amount of demonstration assistance.

Prospects 'See and Feel'

Various types of systems are employed, and there is a different type of air distributing method in nearly every office. Thus, by a visit to Avery's headquarters, a prospect can not only see the various types of equipment in operation, but determine for himself which one provides conditions which he finds most satisfactory.

Special treatment has been given the drafting room. This is an "inside" room, with special lighting fixtures. Conditioned air is introduced through the perforated ceiling, which is only 7 ft. 6 in. high. This provides a draft free, perfectly conditioned work room.

One of the most interesting rooms in the entire Avery establishment is an entirely enclosed room on the second floor, over the door of which is printed the intriguing label "Skull Cave."

The Classroom Program

"We didn't know at first just what to do with this room," Avery explained. "It was suggested that we install a bar and use the room for entertainment purposes. But we have very little need for any large scale entertaining on our own premises, so I ruled this out.

"We had been doing some training of our personnel and the thought occurred to me 'why not make this into a classroom and develop a real training and educational program for our own organization?'"

So a classroom it became, with blackboard and chart equipment, the "one-armed" schoolroom-type chairs, a screen, a slide projector, and a "reflector," (which magnifies and projects on the screen any illustration, drawing, or printed page of any kind).

The room was air conditioned for occupancy conditions of upwards of 100 people (this being an effective demonstration for prospects).

Classes in the "Skull Cave" cover almost all phases of the company's activities. They are held from 5 to 6:15 p.m. on weekdays, the frequency depending on the nature of the course. Attendance is taken, and good attendance records help toward promotion in the Avery organization.

The engineering course is directed by Denny Boggs, chief engineer. It is a "refresher" course for those already engaged in engineering work, and an educational course for those who strive to get into engineering work. (Just teaching the course is a wonderful "refresher" in itself, says Avery).

Some 30 people take the service course, taught by Jim Black. All the men in the organization are required to take it, and many of the girls do, to familiarize themselves with the business.

A blueprint-reading course is given for service engineers so that they can be promoted to installing and erecting jobs.

Two afternoons a week of blueprint-reading instruction for three weeks will usually enable a service engineer to pick up enough knowledge to read blueprints for the type of work he will have to do.

The sales course—largely on principles of salesmanship and specialty selling—is taught by Avery himself.

Occasionally an outsider is brought in to address the classes—sometimes a consulting engineer, to tell the Avery organization what the consulting engineer expects from a contractor.

This training within the organization, Avery believes, is a great morale builder as well as actually helping in the overall objective of "doing a better job."

Avery approaches the merchandising part of his business with the same intent of providing the best possible service that is characteristic of good engineering and contracting firms.

In the matter of home freezers, for example, there is always one model in operation in stock. Thus, if there is a failure of a customer's home freezer which cannot be fixed on the spot within a matter of a few hours, the freezer in stock (which is "down" to service temperatures) is taken out and exchanged for the one which is not functioning.

ACE ICE CREAM CABINET CORPORATION
ACE
NEW YORK 60, N.Y.

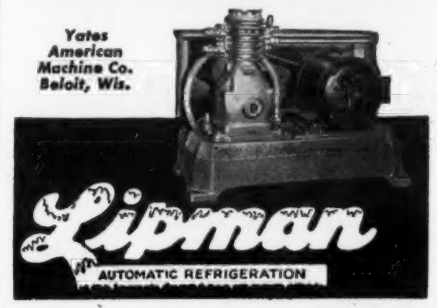
MANUFACTURERS OF
Ice Cream Cabinets
Farm and Home Freezers
Frozen Food Display Cabinets
Soda Fountains and Bob Tails.

Certified
BY A QUARTER CENTURY OF
REFRIGERATION KNOW-HOW

Plan your automatic refrigeration installations for a triple advantage: Proved performance, low first cost, low maintenance cost. LIPMAN machines for dependable service in any field of commercial refrigeration are the result of more than a quarter century of manufacturing know-how. Let LIPMAN serve your needs profitably!

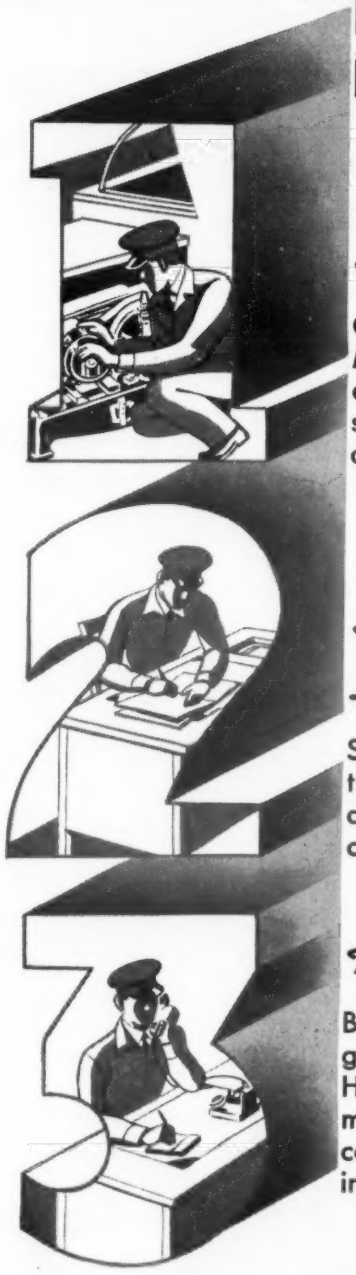
GENERAL REFRIGERATION DIVISION

Yates American Machine Co. Beloit, Wis.



3 Big Reasons Why

HUNDREDS OF SERVICE MEN
PREFER TO SERVICE HUSSMANN
REFRIGERATION EQUIPMENT



They Admire the Fine HUSSMANN Engineering

Competent, experienced Refrigeration Service Men tell us that it's a real pleasure to work on dependable, HUSSMANN Equipment. It's simply the admiration one good workman always has for another's fine workmanship.

They Appreciate the Liberal HUSSMANN Contract

Service Men who work for HUSSMANN in the field are protected by a contract which assures them complete protection as to rates, compensation, etc.

They Profit Through HUSSMANN'S Huge Volume

Because HUSSMANN Equipment is in such great demand—and because so many HUSSMANN Installations are constantly being made—Service Men in every section of the country get regular, frequent calls that result in a dependable, consistent source of income.

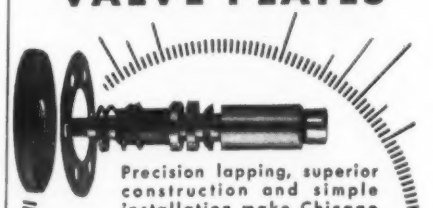
HUSSMANN
REFRIGERATION, INC.
HUSSMANN BUILDING • ST. LOUIS 6, MO.

MANUFACTURER WANTED

for absorption-type household refrigerator, thoroughly tested. Tube bending and welding facilities required. Principals only. Please address reply to our advertising agency.

Doremus & Company
Attn: C. W. M.
53 State Street
Boston 9, Mass.

PLAYSAFE
USE
CHICAGO SEALS
and
VALVE PLATES



Precision lapping, superior construction and simple installation make Chicago seals ideal for replacement.

Only Chicago valve plates have replaceable seats.

PERFECT BALANCE

Chicago Seals

CHICAGO SEAL CO.
20 NORTH WACKER DRIVE • CHICAGO 6, ILL.

Temperatures Held Within 0.3° F. Required In Blood Fractionation Laboratory

By C. Dale Mericle

LANSING, Mich. — Temperatures are held to within 0.3° F. in the new blood fractionation laboratory of the Michigan Department of Health here where gamma-globulin will be extracted from human blood plasma to fight measles and other diseases.

Temperatures involved in the blood fractionation process are extremely critical. That is why such close control of temperature is necessary.

The job was installed by Hager-Fox Heating & Refrigeration Co., a recently formed Lansing firm headed by E. C. Fox, which holds a distributor-dealer franchise for the Chrysler Airtemp line.

Refrigeration installed for the storage and processing of blood plasma in this particular operation includes two 3-hp. Airtemp units and three 5-hp. machines, all water cooled. One of the 3-hp. units is employed to refrigerate coolant for controlling the temperature of the blood plasma itself during the fractionation process. The other four machines control the temperature of the air in the entrance, processing, and storage rooms.

Fractionation of blood plasma is accomplished by precipitation of specific components and collection of the precipitates in a centrifuge. This centrifuge is an electrically driven machine which attains speeds of 15,000 to 30,000 r.p.m., and at these speeds the precipitated components in the plasma, such as gamma-globulin are separated by centrifugal force.

This bank of four Leeds & Northrup Micromax units controls the operation and records the temperatures of the three air conditioned rooms and the coolant unit.

(Photo by E. P. R. Boynton)

Plasma is placed in a large stainless steel kettle mounted on casters and is cooled to 32° F. Alcohol is added and the temperature gradually lowered to 23° F. Cooling is accomplished by means of a "portable" stainless steel coil with flexible lines to the coolant master supply lines.

Then the plasma is placed in the centrifuge which is held at 23° to 25° F. by circulation of the coolant through the machine. After the fractionation has been completed, the moisture and alcohol must be removed from the gamma-globulin so that it may be sealed up in the form of a powder. If the ice-alcohol mixture is permitted to warm up and melt, the effectiveness of the gamma-globulin will be destroyed.

This final dehydrating process is carried out by drying from the frozen state. This process is accelerated by establishing a wide temperature gradient in a high vacuum. Low temperatures in the evaporator are accomplished by two-stage refrigeration. Ethane and propane are the refrigerants used in the two-stage setup which provides temperatures in the neighborhood of -80° F.

Evaporator of the machine consists of a large circular plate held at -80° F. in a glass-fronted compartment on which a high vacuum is drawn. The solution of alcohol, water and gamma-globulin is removed from the centrifuge and then placed in this low temperature compartment.

The combination of the vacuum and the low temperature causes the moisture in the frozen solution to sublimate and collect on the plate evaporator in the form of ice. In other words, the moisture changes directly from ice to vapor, omitting the intermediate liquid stage, and the moisture-vapor freezes on the evaporator.

Three special cold rooms have been constructed from Lindsay Structure in one of the buildings of the Michigan Dept. of Health for the blood fractionation process. Four of the five package conditioners are located in these three rooms, but the two-stage drying unit is placed just outside.

Overall size of the cold room structure measures approximately 50 ft. long, 10 ft. wide, and 9 ft. high. Interior dimensions of the entrance room, which is held at 38° F. by a 3-hp. conditioner, are 15 ft. long by 8 ft. wide by 8 ft. high. The processing room, held at 20° F. by two 5-hp. machines, measures 19 ft. long, and the storage room, which is kept at 0° F. by 5-hp. unit, is 11 ft. long.

Lindsay Structure is a patented construction method which employs a frame-work of specially designed metal channels over which are stretched thin sheets of metal. Aluminum sheets were used on this installation, which is insulated on sides and ceiling with 10 in. of glass wool. Plastic spacers between the inner and outer linings are used to keep heat transfer by conduction at a minimum.

Floor of the cold rooms consists of a 4-in. slab of concrete laid over 6 in. of cork, the latter resting on the sub flooring of the main structure housing the cold rooms.

Choice of this type of construction and the use of "packaged" refrigeration and air conditioning equipment was partly based on the short "life-expectancy" of the usual laboratory installation.

Such an installation as this may be used for 18 months, perhaps a little longer, but by that time the experiment is finished and some new project will be started. The type of structure used here permits it to be readily dimantled and reassembled elsewhere, or changes to be made in its shape. Package refrigeration units can likewise be moved and adapted to other purposes.

The 38° F. entrance room is air conditioned by a 3-hp. "Freon-12" Airtemp package unit placed at one end of the room. The cabinet of the unit was built up to keep space requirements at a minimum, points out Mr. Fox, who engineered and installed the job.

The cooled air is fed into a duct approximately 10 ft. long which runs down the center of the ceiling, the conventional canvas connection between the duct and the conditioner being used to eliminate transmission of noise and vibration. Two 12-in. Barber-Colman diffusers are set into the duct to deliver the conditioned air.

Twenty per cent of the air for the storage room unit is supplied from the air conditioning system of the laboratory building, while 80% is recirculated. The units in the process and storage rooms use 100% recirculated air.

Besides serving as an air conditioned anteroom, the entrance room also provides refrigerated storage for alcohol drums. The conditioner is controlled by a Leeds & Northrup Micromax automatic control which is part of the whole control panel set up in the main hall adjoining the cold rooms.

At the opposite end of the 50 ft. long cold room structure is the storage room which is held at 0° F. by a 5-hp. Airtemp conditioner. This, too, is controlled by a Leeds & Northrup Micromax. Only one Barber-Colman diffuser is employed here, this a 14 in. model connected by ductwork to the conditioner.

Most interesting room, perhaps, is the larger processing room where the precooling and fractionation of the blood plasma is actually performed. When completed this room will house two 2-hp. centrifuges and a single 1-hp. centrifuge. These three machines will be refrigerated with an indirect system employing a solution of 70% ethyl alcohol as the coolant.

To hold the temperature of this processing room at 20° F., two 5-hp. machines were installed by Hager-Fox. A single 5-hp. machine is large enough to keep the room at 20° F., but two machines were installed to insure absolute control of the temperature at all times, explains Mr. Fox. When one machine shuts down automatically for defrosting, the other machine cuts in. Having two machines also provides insurance against loss of refrigeration in the event of a breakdown.

Because the condensing units are located in the cold rooms, Rubbertex insulation was placed on the panels of the machine compartments of the conditioners to reduce leakage of

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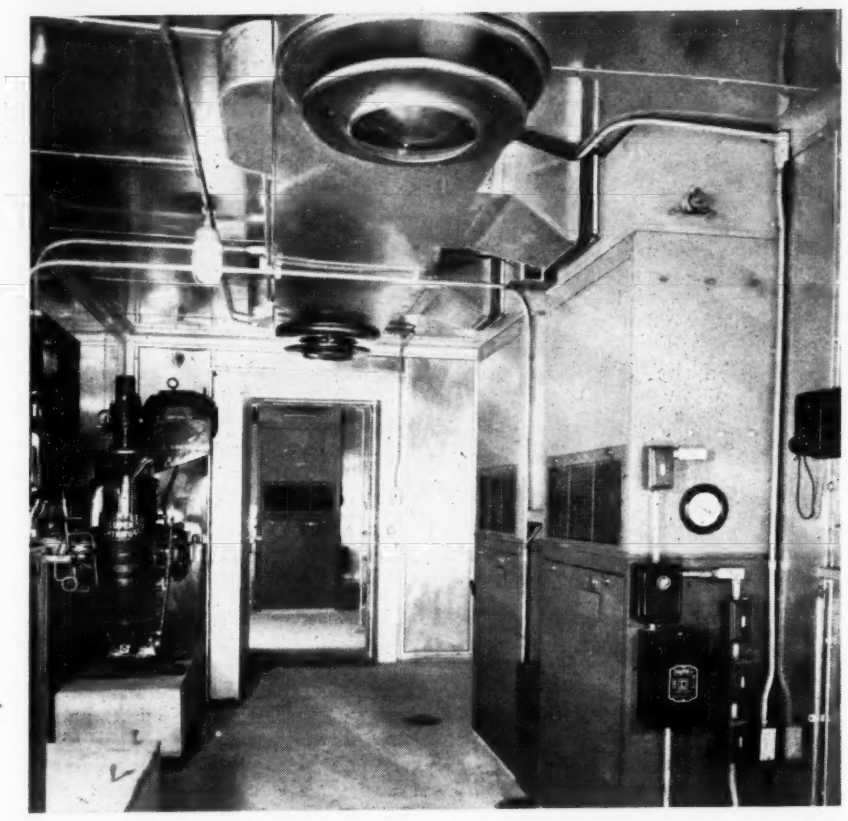
Hard at Work for Science



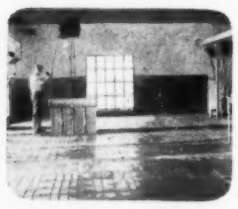
(Photo by E. P. R. Boynton)

At the right are the two 5-hp. units in the processing room, and through the open doorway can be seen the unit in the 0° F. storage room. One of the two 2-hp. centrifuges for fractionation of blood plasma has already been installed in the new laboratory of the Michigan Department of Health in Lansing, Mich.

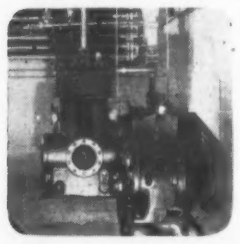
Georgia Community Refrigeration Center Makes Remarkable Growth

The City Ice Company of Gainesville started in 1929 with a 20-ton ice plant. Today it provides complete refrigeration services and operates eight additional plants throughout Georgia, all being developed into Community Refrigeration Centers.

The original plant now makes 72 tons of ice daily; rents 1675 lockers; provides food processing and pork curing; operates extensive cold storages; quick-freezes up to 30,000 lb. of poultry per day; ices railroad cars and trucks; and sells refrigerators and appliances. The first Frick machine is still in continuous operation, six more have been added in this plant, and 15 more in the other plants.



Labor-Saving Equipment Harvests Four Ice Cans at Once



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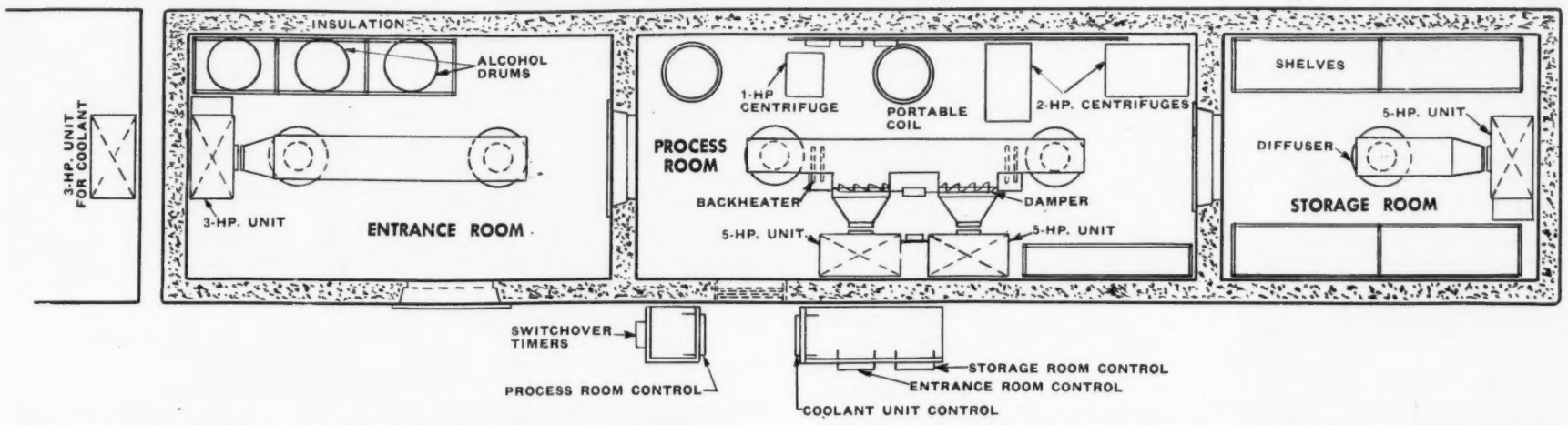
Distributors for Kinetic's "Freon-11," "Freon-12," "Freon-21," "Freon-22" and "Freon-113"

Plan View of Blood Fractionation Laboratory at Michigan State Department of Health



This view shows location of the four package units used to control air temperature in the three rooms and the fifth unit employed to refrigerate coolant. Gamma-globulin for inoculation against measles and other diseases is obtained in the process room by fractionation in high-speed centrifuges. Temperatures are critical, so the process room is held at 20° F. with a temperature variation of no more than 0.3° F. by two 5-hp. units and electric backheaters. One unit operates for six hours while the other is defrosted by electric strip heaters, the changeover and defrosting being automatically controlled. The entrance room is held at 38° F., the storage room at 0° F.

Controllers for Processing Room Maintain Temperatures, Regulate Automatic Defrosting

(Concluded from preceding page)

heat from the compressor. Those in the processing and storage rooms have a 2-in. thick insulation; the 3-hp. unit in the entrance room carries 1 in. of insulation around the machine compartment.

Coils in the processing room conditioners are 10-row Acme direct expansion fin type. These are defrosted at 6-hr. intervals by zinc-plated Chromolux electric strip heaters. Defrosting requires from 15 minutes to an hour. Similar strip heaters have been installed in the package cooling unit used in the storage room of the fractionation laboratory, but the defrost control on this unit is manually operated. A time control switch in the main instrument panel controls the defrosting of the two units in the processing room.

The two conditioners are connected to a common duct in the center of the ceiling with a 12-in. Barber-Colman diffuser at each end. Return air is drawn into the conditioners through grilles in the front and filtered.

Backheating is employed to further insure close temperature control. This is provided by eight 500-watt Chromolux electric strip heaters installed in the supply duct between the dampers and the air diffusers, the heaters also being controlled by the main Leeds & Northrup control panel outside.

Also located outside the three cold rooms is the 3-hp. Airtemp unit which refrigerates the coolant supplied for precooling the blood plasma and cooling the centrifuges. The coolant is a 70% ethyl alcohol solution cooled to 5° F. in an Acme heat exchanger connected to the condensing unit.

It is circulated through the lines by a Bell & Gosset bronze-headed pump. Coolant lines are run at ceiling height through the entrance room into the processing room where they are connected to the three centrifuges and the portable coil. In the 38° F. entrance room these coolant lines are insulated.

The portable coil consists of a stainless steel coil connected to the master coolant lines by means of flexible tubing. When not in use it hangs on the wall. It is used to precool the blood plasma to approximately 23° F. while alcohol is added in the movable stainless steel kettle. Coolant is admitted to this coil and to the three centrifuges by motorized valves.

Control panels for the three cold rooms and the coolant unit are located just outside the processing room, besides a four-pane Thermopane window. A telephone is also connected up from the control panel to the processing room.

The Micromax controller for the two units in the processing room is separate from the three controllers connected to the units in the storage and entrance rooms and the coolant cooler.

Two major functions are performed by the control hookup for the two 5-hp. units in the processing room. One function is, of course, to maintain air temperatures in the space to within 0.3° F.; the other function being to provide for automatic defrosting.

A necessary part of both the temperature control and defrost system is the motor-operated damper located in the air outlet from each of the conditioners in the process room. When one of the conditioners is being defrosted by electric strip heaters the damper in the air delivery duct of that conditioner is closed. This is to prevent the heat needed for defrosting from entering the conditioned space.

The conditioners run alternately for six hours at a stretch. When one stops for defrosting, the other conditioner is immediately started in operation and will run for six hours. It does not require six hours to defrost the coils, the six-hour running time having been selected more or less arbitrarily.

Sequence of operations in defrosting and controlling the process room conditioners is as follows: First, at the six-hour intervals the program selector (timer) positions the damper, that is, it shuts the damper of the unit to be defrosted and opens the damper of the unit which is to operate.

Through auxiliary electrical contacts in the damper motor and relays the fan motor in the conditioner to be defrosted is stopped and the fan motor in the conditioner to be operated is started. Closing one damper also cuts in the electric strip heaters for that conditioner.

Across the fan motor electric leads are two additional relays. One relay turns on a green pilot light at the master control panel to indicate that the fan is operating. The other relay opens a solenoid valve in the liquid refrigerant valve, thus permitting the condensing unit to start. There are high and low-pressure safety cut-outs on the condensing units, but the temperature control of the processing room is achieved by backheating.

A Leeds & Northrup Thermohm thermocouple located between the return air intakes of the two conditioners controls the backheating and thus the air temperature. The thermocouple is connected to a Wheatstone bridge potentiometer circuit, which, in turn, controls the current to the electric strip backheaters through a single switch.

Manual disconnect switches are provided in the event that all eight heating strips are not needed. Two strips can thus be disconnected.

As a safety measure an additional control has been provided for the processing room which will cut in the other unit if one conditioner should fail. For example, should a conditioner fail to start up again after its six-hour shutdown for defrosting, this safety control would override the other controls as soon as the room temperature went up 2° and would start the conditioner which had just shut down to begin defrosting. At the same time a red signal would be lighted on the control panel to show that something was wrong.

Controls for the entrance and storage room conditioners are relatively simple. In each, thermocouples are connected to a Micromax controller which in turn controls a solenoid valve in the refrigerant liquid line. When the controls call for cooling, the valve is open. When the valve is closed, the compressor pumps down.

The 3-hp. unit which refrigerates the coolant for the centrifuges and the portable pre-cooling coil is placed in operation manually and thereafter is controlled by pressure-actuated switches. Control of the coolant supplied by this unit, however, is automatically governed by individual thermostatically controlled motorized valves which meter the coolant to the centrifuges and portable coil.

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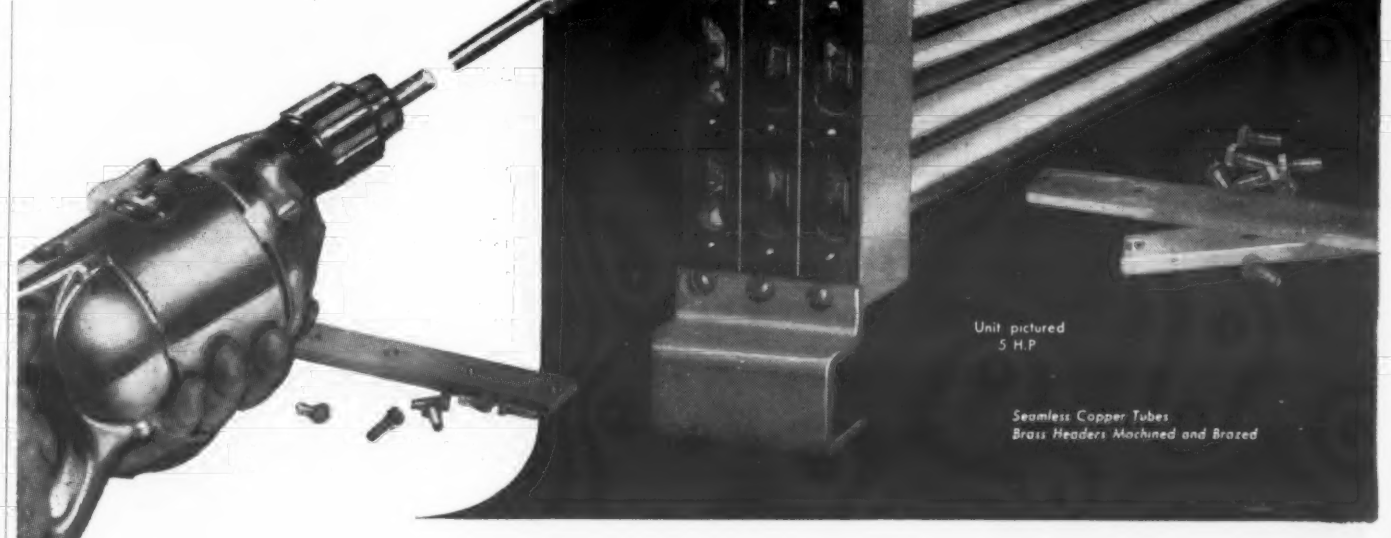

HALSTEAD & MITCHELL

Cleanable CONDENSERS

Service Engineers and commercial users throughout the refrigeration industry are now specifying HM Condensers for replacement and conversion orders. These new HM units combine two features never before obtainable in tube-within-a-tube water-cooled condensers; (1) They're CLEANABLE . . . the water tubes are easily accessible at both ends for the spiral cleaning tool to restore the interior water surfaces to "new-unit" efficiency. (2) A TRUE-COUNTER-FLOW relationship is achieved between the coolant and the refrigerant through a unique seamless copper tube-within-a-tube construction that makes obsolete most types of similar water-cooled condensers. Thus, water and space requirements are reduced substantially and a most economical operation is obtained.

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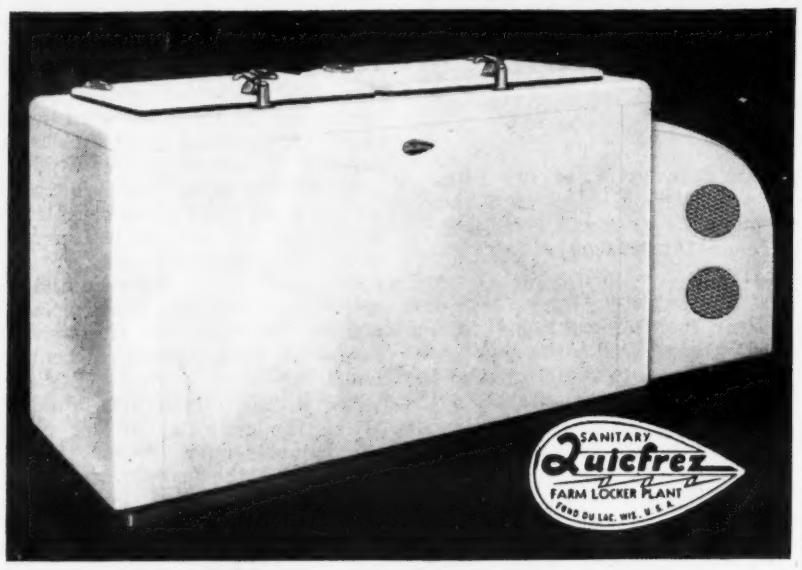

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Ice Refrigerators For More Than 40 Years—
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What's New

* * *

3.2-cu.ft. Home Freezer Added to Crosley Line

CINCINNATI—Addition of a 3-ft. home freezer to the Crosley line has been announced by L. L. Stratton, sales manager, refrigeration division.

The freezer, to be known as the "Crosley Frostmaster," is a compact standard-base-cabinet unit with a food capacity of 100 pounds.

Crosley home freezer production has been contracted to the Nashville Division of Consolidated Vultee Aircraft Corp., an associated company of the Avco Mfg. Corp. The Frostmaster will be made available to the public through Crosley distributors and dealers and through Frozen Food Products, Inc., of New York City.

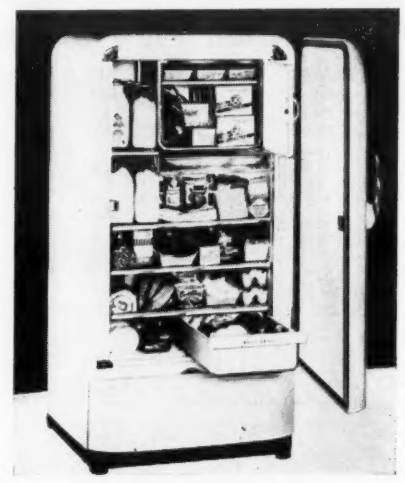
All working parts of the "Frostmaster" are hermetically sealed, requiring no oil or care; all exposed hardware is corrosion resistant.

The home freezer will be powered with the same unit used in the Crosley refrigerator. A thermostatic control, located beneath the cabinet, maintains freezing storage temperature.

The electric welded exterior shell of the cabinet is sealed with mastic sealer to eliminate moisture infiltration.

The Crosley freezer is equipped with an automatic safety latch and table top work surface of linoleum with polished aluminum trim. Interior and exterior are of white Dulux finish; all corners of the cabinet are rounded to facilitate cleaning. The "Frostmaster" needs only to be defrosted twice yearly, its makers say.

Other features include the recessed toe base; flush-to-the-floor construction, and a wire basket, movable for quick inventory.



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Coolerator Refrigerator Fits Crowded Kitchen

DULUTH, Minn. — Designed for householders who want a refrigerator with ample capacity to fit into a small or crowded kitchen, The Coolerator Co. is now offering a 28-in.-wide, 25-in.-deep, 56¾-in.-high electric model, designated as the DR-70.

Coolerator's newest refrigerator has a storage capacity of 7¾ cu. ft., with 15.7 sq. ft. of shelf space but is compact and streamlined to fit into small and medium size kitchens.

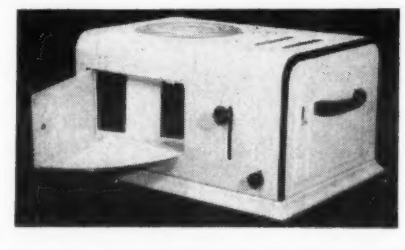
It has a 25-pound, built-in frozen food locker (a full cubic foot) with a separate shelf for three ice cube trays (freezing 6 pounds of cubes).

Lasko Combines Toaster, Hot Plate, Warming Oven

WEST CHESTER, Pa.—A pop-up toaster, hot plate, and warming oven all rolled into one is the new "Lasko Toastove," manufactured by Lasko Metal Products, Inc. here.

Housed in an all-white porcelain cabinet, the "Toastove" has a cleaning compartment located in the base. It is constructed of heavy gauge steel throughout, has a michrome element, and thermo-plastic handles and knobs.

Dimensions of the unit are: 13¼ in. long by 9¾ in. wide by 7½ in. high, states Myron B. Harowitz, general sales manager. Retail price listed is $21.95 f.o.b., West Chester.



Frigidaire Introduces 7 Milk Cooler Models

DAYTON—A complete new line of milk coolers, designed for farm use and featuring "drop-in" and "coil-and-rack" type refrigerating units, is being introduced currently by Frigidaire.

Seven separate models, with capacities ranging from three to 12 10-gallon milk cans, are available with either type cooling unit.

The "drop-in" type cooler is comprised of a cabinet, condensing unit, motor-driven agitator pump, cooling coils, and controls. An agitator pump and cooling coils are installed in the tank through an opening in the cabinet deck. The agitator pump draws water from the tank bottom, forces it over copper cooling coils, and discharges it above the water line.

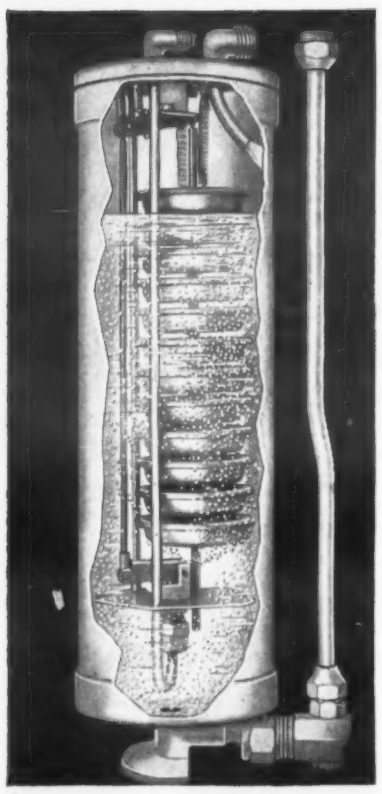
An air-cooled condensing unit, mounted on the cabinet deck, is equipped with a built-in overload device that protects the motor against burn-outs. Both pump and condensing unit motors are controlled thermostatically.

An alternate method refrigeration is afforded in the "coil-and-rack" models. Instead of cooling by circulation, a continuous sealed refrigerant tube, fitted into a removable rack, surrounds the inside walls of the water tank.

A bank of ice, built up around the coil, chills the water and affords increased cooling capacity. A thermostatic expansion valve controls the flow of refrigerant. A circulator pump and spray attachment can be added to speed the cooling process.

Outer shells of the new milk coolers are constructed of heavy gauge bonderized steel.

It's EASIER TO SELL THE NEW HUDSON CONSTANT PRESSURE CARBONATOR THAN TO SELL AGAINST IT!



Another Quality Product from the House of Hudson

Maybe you're the world's best salesman. We don't know. But if you're a smart salesman you'll sell what's easiest to sell and you won't try to sell a horse and buggy to a man who wants a new automobile. Nor, will you try to write orders for complicated, expensive, old fashioned carbonating machines when the customers have read, seen or heard of the Hudson Constant Pressure Carbonator. The Hudson is a Brand New Idea—simple, efficient, dependable. NO motor; NO pump; NO pulleys, belts or gears. NO servicing expense. It's compact, easily installed, guaranteed for 10 years.

No other carbonating equipment can offer so many valuable and desirable features.

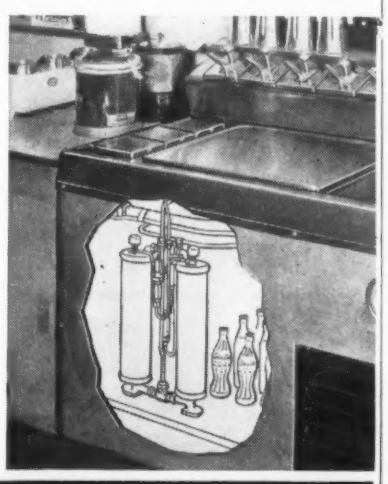
Remember, month by month it will be easier to sell a Hudson—than any other similar equipment. If you want to get way out ahead of competition and make real money—start selling Hudson Constant Pressure Carbonators NOW! Write for details.

HOW IT WORKS

The twin cylinders of the Hudson Constant Pressure Carbonator alternate in operation to deliver 25 gallons or more per hour flow of sparkling, carbonated water at constant pressure up to 125 pounds at the draft arm, regardless of city water pressure.

INSTALLATION

The Hudson Constant Pressure Carbonator is small and compact (3¾" x 16¾" x 9¾"), weighs only 17 pounds and may be installed in any sweet water bath or other cooling system. Expense of service and replacement of parts are eliminated with the Hudson Constant Pressure Carbonator.



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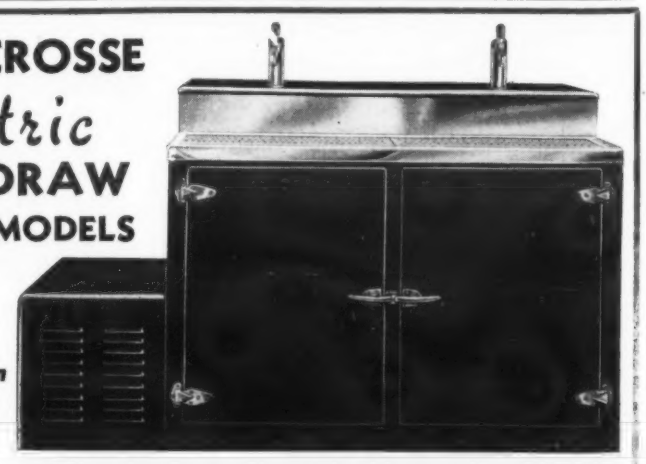

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New Technique In Measuring Moisture Content Will Insure a Dryer 'Freon'

WILMINGTON, Del.—A new technique for measuring the amount of water in "Freon" refrigerants with an accuracy of one part in a million will help to insure the keeping of the moisture content of "Freon-12" as supplied by the producer to not more than 10 parts per million, and this in turn will prove of benefit to the design and operation of refrigeration systems, declares W. W. Rhodes, sales director of Kinetic Chemicals, Inc.

The new technique was described to the American Chemical Society meeting at Atlantic City in a paper by A. F. Benning, A. A. Ebert, and C. F. Irwin of the Organic Chemicals Department of the du Pont Co. Making use of the infrared spectrometer, the new technique is capable of determining the water in "Freon" and certain other fluids with an accuracy of one part per million, and an analysis can be made in five minutes.

The infrared technique is quite simple in theory, Mr. Ebert related. Invisible light, with a wavelength of 2.67 microns, or about one ten-thousandth of an inch, is passed through a transparent cell filled with the sample to be tested.

HOW IT IS ACCOMPLISHED

"Freon" absorbs very little of the radiation at this particular wavelength, but water strongly absorbs this type of invisible light. Thus, by means of a device which measures and automatically records the intensity of the infrared light before and after it has passed through the test cell, the amount of water present may be read directly from a calibrated scale.

What this development means to the refrigeration industry was outlined by Mr. Rhodes in the following statement:

"Manufacturers of electric household refrigerators sometime ago conceived the idea that the household refrigerator of the future must contain a compartment for holding frozen foodstuffs. It is now apparent that almost every new model will contain such a compartment.

"In general, instead of the smaller evaporator employed for making ice cubes and storing them, the large evaporator is now the vogue and evaporator temperatures have been decreased to the point where 10° F. or lower may be maintained within this compartment.

EQUIPMENT MAKERS' PROBLEM

"During the postwar planning period Kinetic Chemicals, Inc. sent a delegation of research chemists and engineers to meet with the research men of those organizations in the refrigerating machinery industry who maintain laboratories for exploring the possibilities of new models of refrigerating equipment. These research groups were asked by the men of Kinetic Chemicals what their particular problems were and what could be done to serve them better.

"Problems, such as copper plating and others that have always been studied, were discussed, but the one problem in common and the most important problem posed by the refrigerating engineers was the matter of moisture in refrigerants.

"On March 25, 1931, Kinetic Chemicals issued Technical Paper No. 8 and the first specification for 'Freon-12' read as follows:

"It shall contain not more than .0025% moisture (H_2O) by weight when tested by Method No. 1.

"Reference to Method No. 1 showed that it was a refined method of estimating moisture by means of conventional P_2O_5 tubes. This method had been employed for several decades to estimate the amount of moisture in refrigerants.

"The refrigerating engineers thought that it would be very helpful to have the moisture content of 'Freon-12' reduced so that it would not exceed 10 parts per million. It is a well-known fact that it is nearly impossible to remove all of the moisture from any sort of a refrigerating machine and, consequently, if the refrigerant entering the system is of low moisture content, when equilibrium is achieved the apparatus will function properly. Boiled down, this means that the refrigerant is expected to be a blotter and take up moisture from the surfaces of the system.

FREEZING DIFFICULTIES

"The postwar refrigerator, providing a compartment for holding frozen foodstuffs, could not be a success unless there was freedom from freezing at the refrigerant metering device.

"It was, therefore, readily apparent to the research groups representing the refrigerating machinery industry and the group representing Kinetic Chemicals, Inc. that 'Freon-12' would have to be supplied with a moisture content of not more than 10 parts per million.

"Apparatus was ordered by Kinetic Chemicals for achieving this result and has been installed for over a year. It is working very satisfactorily and today in ton drums the moisture content of 'Freon-12' never exceeds 8 parts per million and the majority of the production is at 5 parts per million.

"In the cylinders it is somewhat higher but seldom exceeds 10 parts per million, and when additional equipment is received and installed it is predicted that even in cylinders the moisture content will not exceed 8 parts per million.

ANALYSIS WAS DIFFICULT

"However, the problem of analyzing 'Freon-12' became very embarrassing as in the range of 0 to 10 parts per million it is exceedingly difficult by the P_2O_5 method to make a good analysis. It has been said by the head of the research group of Kinetic Chemicals that there are only two men in this group with the proper patience and technique to make an analysis by the P_2O_5 method which is accurate to 1 part per million in the range of 0 to 10 parts per million. Most analysts are not fitted temperamentally to exercise the extreme care necessary to secure a credible result.

"The necessity, therefore, was for a method of analysis which would eliminate human error and make it possible for the average analyst to secure a good result."

The problem was attacked by A. F. Benning, A. A. Ebert, and C. F. Irwin, of the Research Staff of Kinetic Chemicals, Inc., and they have perfected the new method of analyzing "Freon-12."

MADE BY CALIF. CONCERN

"These men have adapted for their purpose a very ingenious instrument developed and manufactured by the National Technical Laboratories of South Pasadena, Calif. The particular instrument that is installed in the laboratories of Kinetic Chemicals, Inc. is the Beckman Infrared Spectrophotometer IR2.

"An over-simplification of what happens in this instrument is that monochromatic infrared radiation of 2.67 microns wavelength is passed through a cell which has quartz windows. The windows are sealed with Teflon gaskets and the absorption path is exactly 4 in. long.

"The 'Freon-12' absorbs very little radiation at this wavelength but the water in the 'Freon-12' absorbs strongly in accordance with Beer's Law, $-\log I/I_0 = KCL$, where I/I_0 is the percentage transmission of the beam through the cell, K is the specific extinction coefficient of water, C is the concentration of water and L is the length of the cell. The quantity $-\log I/I_0$ is called the optical density. Since quartz transmits well to a wavelength of about 3 microns, there is little absorption in the windows of the cell at a wavelenth of 2.67 microns.

"Accordingly, the amount of infrared light transmitted varies with the amount of water present and this transmitted light if focused on a very sensitive thermocouple coated with a reagent which absorbs the heat. The heat raises the temperature of the thermocouple and its equivalent in electrical energy is amplified by radio tubes and this current in turn actuates a sensitive galvanometer, the pointer of which indicates the amount of moisture present in the sample. The galvanometer has of course been calibrated from samples of 'Freon-12' of known moisture content.

"In operation a tube containing a sample of 'Freon' is connected to the cell, a stream of 'Freon' in the liquid phase passes through the cell, the operator presses a button and reads directly from the scale on the instrument the amount of water in the sample. He can make duplicate determinations of the moisture content of a sample in a period of five minutes and it is thought that the time can be reduced to two minutes. These determinations are accurate in the range of 0 to 10 parts per million to 1 part per million.

"The method, therefore, permits the analysis of 'Freon-12' of low moisture content with an acceptable degree of error and eliminates the human equation, speeding up the operation from a minimum of four hours to a time not exceeding five minutes. This machine can easily replace 16 analysts and although it is costly, it will pay for itself in a short space of time.

OTHERS MAY USE IT

"Some of the refrigerating machinery companies are placing orders for these instruments, not primarily to check the 'Freon-12' as received, but to check samples withdrawn from refrigerating machinery systems so that there may be assurance that there will be no malfunctioning of the systems."

WANTED! REFRIGERATION ★ ENGINEERS

Here is an opportunity for several experienced capable household refrigeration design and production engineers to become associated with one of the leading home freezer manufacturers. Permanent, responsible positions and salary commensurate with ability.

Also, a similar opportunity for several engineers experienced in refrigeration cabinet design and production.

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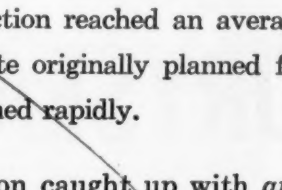

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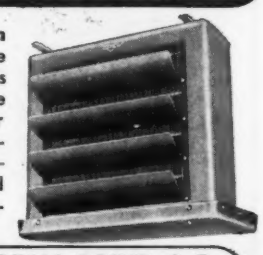
From internal engineering to external finish, every factor in Larkin refrigeration products is flawless in execution. The same constructive ability which originated patented Cross Fin Coils also produces Humi-Temp Forced Convection Units — Bare Tube and Zinc Fused Steel Plate Coils — Air Conditioning Units—Instantaneous Water Coolers—Evaporative Condensers—and other high-grade items demanded in the commercial and industrial refrigeration field.



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THE FIRST NEW GEMCO came off of the assembly line January 9. This was seven days later than originally planned, due to material delays.

BY FEBRUARY 17, production reached an average of 20 per day, the rate originally planned for February. Output gained rapidly.

BY MARCH 10, production caught up with *and passed* the cumulative production on the original schedule. More and more distributors were asking for carload shipments. It became necessary to revise schedules *upward.*

BY APRIL 1, it was clearly evident that peak production of 1,000 Gemcos a month will be reached in June . . . *two months ahead of the original schedule*

GEMCO CONSUMER ADVERTISING is keeping pace. Full pages in 2 colors ran in Time Magazine in March and April. Saturday Evening Post and Newsweek are added in May . . . full pages in 2 colors. Several more important magazines will be added in the coming months. Gemco distributors and dealers will be backed by the strongest, most competitive advertising in air-conditioning history.

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GENERAL ENGINEERING AND MANUFACTURING CO.
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Birmingham, Ala. Office Of WAA Has Offering Of Refrigeration Surplus

BIRMINGHAM, Ala.—A sealed bid sale on surplus refrigeration and air conditioning equipment is now being conducted here by the local office of the War Assets Administration. Bidding closes on May 6.

Equipment for sale includes a refrigeration cabinet, a cooling tower agitator, "air conditioning coolers," various types of compressors, condensers and evaporators, and control switches.

Specific listings of the available surplus equipment can be obtained from the War Assets Administration office located at 1955 N. 50th St., Birmingham 1.

Servicing Truck Refrigeration Units

Editor's Note: An important part of a truck plate installation using a remote system is the make-and-break valve assembly used to connect the liquid and suction lines of the truck to lines from the condensing unit in the plant, as pointed out in this instalment, prepared with the collaboration of Kold-Hold Mfg. Co.

Instalment No. 32

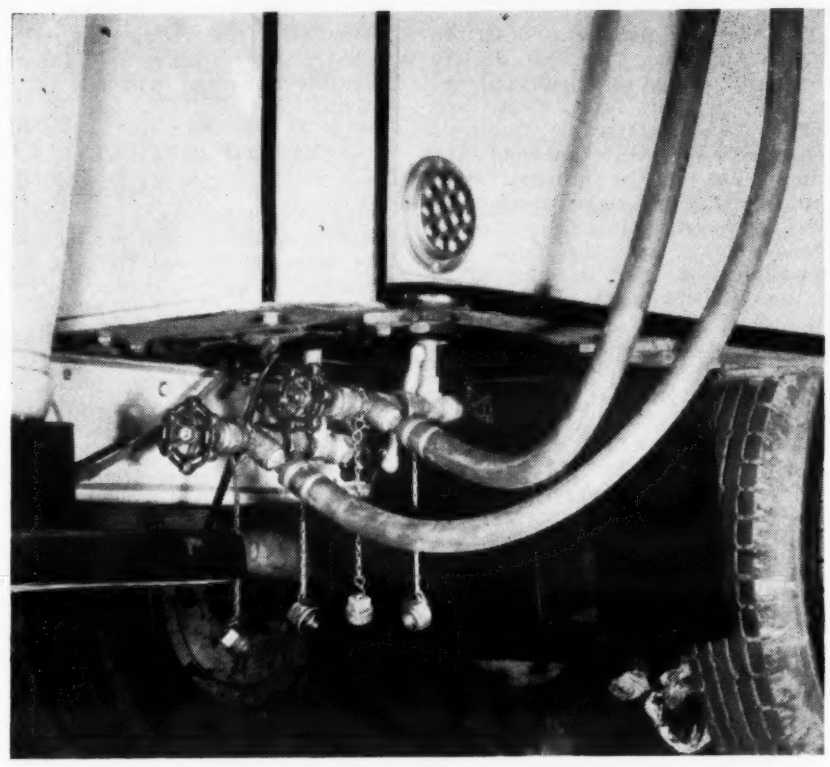

Fig. 10—Make-and-break valve connections are mounted below the body of this truck. After the "charging" operation, the hinged black box covers the valves to protect them.

* * *

Make-and-Break Valves For Remote Systems

Remote installations are made in the same manner as those where the condensing unit is mounted on the truck body, except that make-and-break valves must be incorporated into the system. A typical installation of make-and-break valves is shown in Fig. 10. Here the flexible hose lines from the plant refrigerating system are connected to the truck system.

Regardless of the refrigerant with which they are used, complete make-and-break valve assemblies consist of two flexible refrigerant lines and two pairs of mating valves, each pair being connected by a gas-tight union. One hose and one pair of valves are for the liquid line while the other hose and pair of valves are for the suction line.

Valve assemblies are arranged with the least practical amount of space between the seats of the opposing valves of each pair to reduce the gas loss and air intake which occur each time the valves are connected.

On valves intended for use with "Freon" or methyl chloride there is an auxiliary purge valve provided to purge air out of the space between the valve halves when they are connected. These purge valves are omitted on ammonia systems.

The liquid line hose and valves are, of course, slightly smaller than those for the suction line. A hose lined with natural rubber is employed in ammonia systems, but a neoprene-lined hose must be used for "Freon" and methyl chloride jobs.

The body halves of the make-and-break valves may be mounted in any convenient location on the truck, such as the empty can compartment on an ice cream truck, the skirt compartment, front or rear outside the body, or in a special box at a convenient point underneath the body.

With the latter type installation, a hinged box cover (see Fig. 10) is required to protect the valves. Truck-mounted halves of the valves are supported on their pipe ends or by brackets. Fig. 11, however, shows valves mounted in the open on the front of the truck just above the cab.

Make-and-break valves are usually located as close together as possible, although this is not important to insure good operation. It is more convenient, however. Necessary clearance for manipulation of the valves and the union nut handles must be provided, of course.

Whether the valves are mounted vertically or horizontally is not important either, but they should be readily accessible, easily operated, and reasonably free from dirt, moisture, and the possibility of damage.

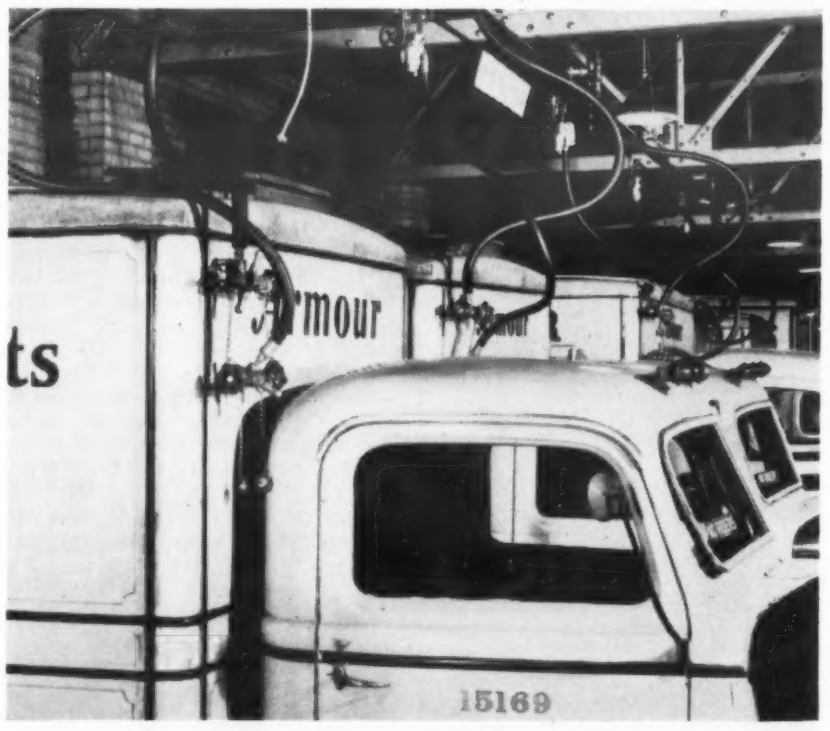

Fig. 11—In this fleet of trucks, make-and-break valves are in the open above the cab.

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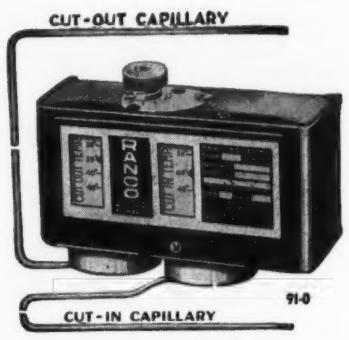

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REVERE Dryseal Copper Refrigeration Tube is made of deoxidized copper (99.9+% pure) and is kept oxide-free by special processing methods. Each length is carefully dehydrated during manufacture, and then immediately sealed at both ends to keep all moisture and other foreign particles out. Because Revere Dryseal is dead soft, it is easy to bend and can be flared for compression fittings without splitting at the end.

In addition, Revere gives you two *extra* advantages: (1) National advertising in The Saturday Evening Post, Business Week, Fortune, Journal of Commerce and many other widely-read publications constantly tells your customers that the name Revere on the products you use is proof of their high quality. (2) The Revere Technical Advisory Service is always ready to work with you in solving your difficult problems.

Revere Dryseal Copper Tube is made for refrigeration, air conditioning, heat control and other services. It comes in sizes from ⅛" to ¾" O.D. with .035" wall, and is standard in 50 foot coils. Revere Dryseal and the many other Revere products are handled by leading distributors throughout the country.

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The highest quality dehydrated copper tube —dry, clean, dead soft and seamless.

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Highlights of Western Show. . . .

Weber Showcase & Fixture Co.'s booth, which featured the "Rollador" frozen food case, and an open type display case, finished in stainless steel.

* * *

Weber Cabinet Features Slide-Out Condensing Unit

Four pieces of equipment were on display in the booth of the Weber Showcase & Fixture Co. of Los Angeles and El Paso, Tex., in addition to the miniature "Rollador" condensing unit designed and built by Bill Pruett, research engineer.

All the Weber equipment featured stainless steel construction. Featuring a slide-out condensing unit was a 20-cu. ft. "Rollador" ice cream and frozen food cabinet, Model D-2005GS.

Other items included a standard temperature, all purpose, self-service, open refrigerated case; a stainless steel condensing unit housing for bag or rack sections; and a "Premier" bob-tail soda fountain.

A wide variety of commercial refrigerator items were shown in the J. H. Batteiger Co. exhibit. In left foreground is a deluxe Buxton soda fountain, finished in leather.

* * *

Batteiger Shows Fountain Unit Finished In Leather

J. H. Batteiger Co., Los Angeles wholesaler for several refrigeration and air conditioning lines, featured a variety of refrigeration equipment in its booth.

There was a full range of Lehigh condensing units from ¼ to 1 hp. in air cooled models; a big Recold water defrost coil, and a small Recold blower coil (No. 207) rated at 135 B.t.u. at 1° T.D.; a Cordley & Hayes bottle water cooler; a Hudson carbonator; plus Buxton (Los Angeles) and Vering (Los Angeles) commercial units, and a Mitchell Mfg. Co. (Chicago) window-type room conditioner.

Operated by a "Freon-12" hermetic unit, the Mitchell conditioner is claimed to be large enough to air condition a room or office measuring up to 300 sq. ft. It is equipped with a filter, and the fan can be operated independently of the condensing unit to provide year-round ventilation if desired.

Buxton models displayed included 5 and 8-ft. soda fountains, the 5-ft. model being a deluxe unit finished in leather; a four-door 40-cu. ft. reach-in; a five-door 60-cu. ft. reach-in; and 5 and 8-ft. beverage coolers. The reach-ins are equipped with slide-out Lehigh condensing units, while the two beverage coolers are available for remote or self-contained installation with Mills direct-drive units. All the Buxton models employ a new acid and grease resistant aluminum alloy.

The one Vering unit on display was a 32-cu. ft. two-door self-contained reach-in which was finished in white Dulux.

U. S. PAT. 2, 218, 393 CANADA PAT. 394, 209 NEW ZEALAND PATENT 82, 389

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Originators and Developers of

WATER DEFROST

Humid Air Evaporators

Leading the field in the development of refrigeration, evaporators for use on high and low temperature applications, "RECOLD" products have a dependable record of performance.

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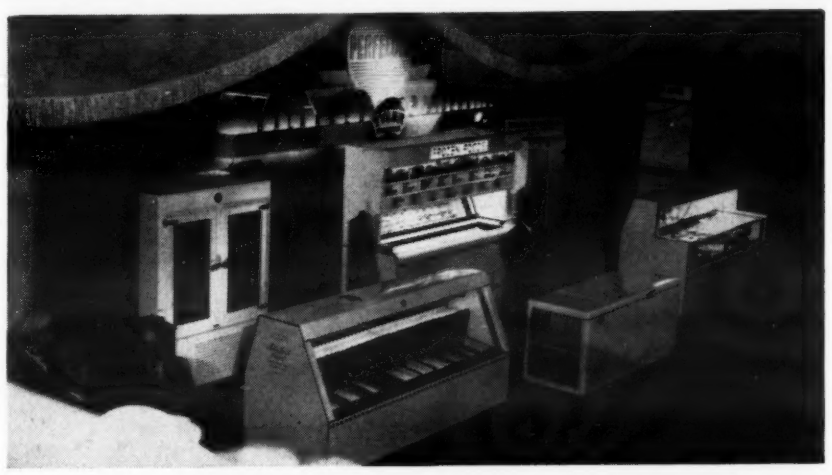

The exhibit of Perfecold, Inc., had a variety of display and storage equipment for both fresh and frozen foods.

* * *

Perfecold Displays Its Own Line, Also Tyler Models

Perfecold, Inc. of Los Angeles, Tyler distributor in California and producer of its own line of reach-ins, beverage coolers, and water coolers, devoted the center spot of its display to the Tyler 8-ft. open frozen-food merchandiser. There was also a Tyler meat and dairy case.

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- Genuine Grunow Parts.
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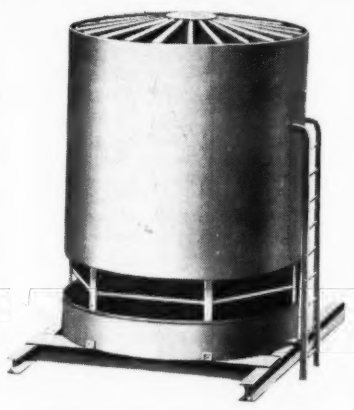

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AEROPASS* CONDENSER

. . . increases refrigeration plant capacity; saves power and water.

Patented features: "duo-pass" coil keeps condenser tubes free from scale; "oilout" constantly cleans oil and dirt from the refrigerant. "Balanced Wet Bulb Control" maintains minimum practical compressor head pressure.

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M46-9
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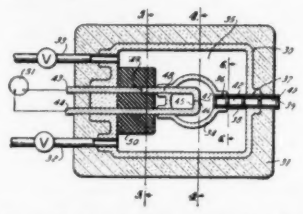
ELECTRICAL AND AUTOMOTIVE PRODUCTS

PATENTS

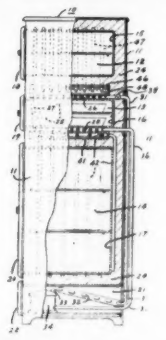
Week of March 4

2,416,775. COOLED RADIATION THERMOCOUPLE. Emmett F. Sarver, Wichita, Kans., assignor of one-half to O. W. Wortman, Wichita, Kans. Application April 20, 1942, Serial No. 439,736. 3 Claims. (Cl. 136—4.)



1. In a device of the character described, an inner housing having walls forming a completely enclosed chamber, an outer casing having corresponding walls spaced from the walls of the inner chamber to provide an annular passageway therebetween, means for circulating a refrigerant through said passageway, a pair of electrical conductors having ends terminating respectively in said chamber and in said passageway, a dissimilar thermoelectrical conductor connecting said ends of the first-named conductors to form a junction in said chamber and a junction in the passageway, a body of insulating material encompassing the junction in the passageway for stabilizing temperature of said junction during momentary fluctuations in temperature of the refrigerant circulated through said passageway, and means for passing heat rays through walls of the housing to act upon the junction within said chamber.

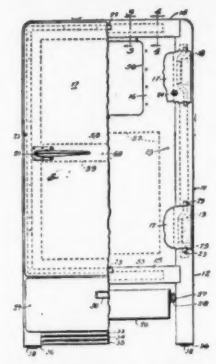
2,416,777. MULTIPLE TEMPERATURE REFRIGERATOR. Edmund F. Schweller, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application March 19, 1945, Serial No. 583,620. 4 Claims. (Cl. 62—116.)



1. A refrigerating apparatus comprising in combination, a cabinet having therein an upper food storage compartment, a lower food storage compartment and an intermediate compartment all insulated from one another, a closed primary refrigerating system associated with said cabinet and including an evaporator for cooling said intermediate compartment, a closed secondary circuit containing a volatile liquid refrigerant for cooling said lower compartment including a refrigerant condensing portion in heat exchange relationship with the evaporator of said primary refrigerating system and refrigerant evaporating portions extending into heat exchange relationship with said lower compartment, another closed secondary circuit containing a volatile liquid refrigerant for cooling said upper compartment.

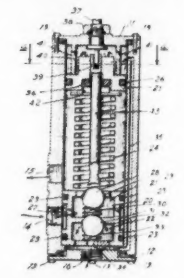
2,416,845. REFRIGERATOR CABINET. William Edward Richard, Evansville, Ind., assignor, by mesne assignments, to Seeger-Sunbeam Corp., a corporation of Minnesota. Application Feb. 25, 1942, Serial No. 432,285. 2 Claims. (Cl. 312—146.)

1. A refrigerator cabinet constructed of a pair of side panels, a top panel, a rear panel and a bottom panel, the said rear panel being formed with an aperture for receiving a mechanical refrigeration unit, and the said bottom panel being disposed above the lower ends of the side panels and engaging the lower end of the rear panel to form a drawer space below said bottom panel, and a door panel hingedly mounted on one of said side panels for closing the front of said cabinet, all of said panels being constructed of an outer layer and an inner layer of rigid fibrous and porous insulating material, the said inner and outer layers being spaced and joined about the borders of each panel by a plurality of intermediate laminations of said fibrous insulating material, forming a chamber in each panel between the inner and outer layers and inside the border laminations said chamber being filled with



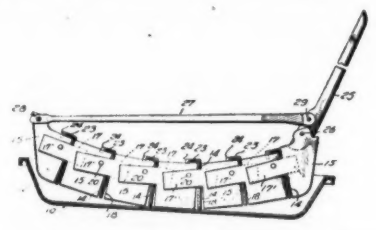
loose fibrous insulating material, the said laminations providing solid and rigid portions adjacent to the edges of each panel, through which the panels are secured together by means of diagonally extending threaded fastening means.

2,416,881. PRESSURE REGULATING VALVE. Merle L. Osborn, Long Beach, Calif. Application July 17, 1945, Serial No. 605,584. 5 Claims. (Cl. 137—53.)



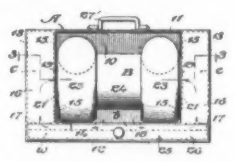
1. A pressure regulating valve comprising: a housing having a cylindrical bore; a valve cage; a piston, said piston and cage being longitudinally movable in said bore; a compression spring urging said cage and said piston away from each other; a pressure inlet positioned in said housing opposite said cage; a valve in said cage normally preventing fluid from flowing into said bore toward said piston; a stem projecting from said piston toward said latter valve and positioned to force the latter from its seat when said spring has been compressed a predetermined distance; a pressure outlet from said housing below said cage; a channel connecting said pressure outlet with said bore above said piston to apply pressure to the latter; and a return port in said housing intermediate said piston and said cage.

2,416,934. ICE CUBE TRAY. Logan L. Mallard, Norfolk, Va., assignor to one-half to H. Clay Hofheimer II, Norfolk, Va. Application Nov. 9, 1938, Serial No. 239,723. 9 Claims. (Cl. 62—108.5.)



1. An ice cube tray comprising a receptacle, a grid structure arranged in said receptacle comprising a plurality of transverse sections and a plurality of respectively relatively rigid longitudinal sections connected for relative movement with respect to each other, and lever means for effecting relative movement of said longitudinal sections comprising a member pivotally connected directly to said grid structure adjacent the other end thereof, said second member being shorter than the over-all length of said grid structure and pivotally connected at its other end to said first member.

2,417,010. AIR CIRCULATING AND CONDITIONING DEVICE. William R. Mobley, Miami, Fla. Application Feb. 23, 1944, Serial No. 523,601. 3 Claims. (Cl. 261—24.)



1. An air conditioning and circulating device comprising a casing, a horizontal wall in said casing near the bottom thereof separating the same into a bottom compartment to contain a body of water and a space thereabove, a pair of vertical partition walls extending between said horizontal wall and the top of said casing near the ends of the latter, respectively, dividing said space into a central chamber and two vertically extending passageways beyond the ends thereof, said central chambers having an opening for admission of air thereto, said horizontal wall having a central opening for flow of air from said central chamber downwardly into said bottom compartment and over a body of water contained therein.

AVAILABLE FOR LICENSING OR SALE

Pat. 2,406,178. RELIEF VALVE. Patented Aug. 20, 1946. Valve is so constructed that it requires only a light, adjustable spring although substantial pressures may be controlled. The valve seat may be made of resilent plastic material. (Owner) Herbert H. Walley, Jr. Address correspondence to Barlow & Barlow, 2005 Industrial Trust Bldg., Providence 3, R. I. Group 33—61. Reg. No. 5,167.

Pat. 2,263,103. AUTOMATIC VALVE. Patented Nov. 18, 1941. A direct acting adjustable thermostatically controlled valve for heating and cooling systems. (Owner) S. S. Rathbun, 40 Forest Place, Rockville Centre, N. Y. Group 33—66. Reg. No. 5,177.

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REFRIGERATION ENGINEER, 41, with outstanding 14 year record. Capable of assuming responsibility for product improvement or new product program. Versed in design, research and application problems. Three patents granted on refrigeration controls. Connection with future wanted in Southwestern United States. BOX 2322, Air Conditioning & Refrigeration News.

SERVICE MANAGER—familiar with commercial and domestic operations. Now employed in this capacity, with 43 men under my supervision. Fully capable of handling distributor or contractors service profitably. Know all the details of service operation and management. Am courteous and efficient. 20 years refrigeration experience. BOX 2329, Air Conditioning & Refrigeration News.

SALES EXECUTIVE desires position as field representative or divisional manager for national commercial refrigeration manufacturer where there is a good future. Excellent references will testify to experience, abilities, and character. Well educated, age 30, married, willing to travel, will produce. BOX 2337, Air Conditioning & Refrigeration News.

AIR CONDITIONING engineer. 15 years experience in equipment and system design, application, sales and management. Now chief engineer of small manufacturing company. Considerable industrial experience especially in heat transfer and drying. Graduate M.E. Interested in position with industrials or consultants. Reply BOX 2341, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

EXPERIENCED COMBINATION commercial, refrigeration, application engineer and service manager wanted, for Frigidaire dealer. On annual salary basis. MILLER ENGINEERING CO., 118 N. Winnebago St., Rockford, Ill.

COMMERCIAL REFRIGERATION sales supervisor wanted by one of the largest Chrysler Airtemp dealers in the Southeast. Must have broad background in the commercial refrigeration field. Salary and commission. Address MOORE-STONER CO., 500 Stewart Ave., S.W., Altanta, Ga.

CHIEF DRAFTSMAN and senior layout draftsman with large commercial manufacturer in Middle West. Experience in domestic or commercial cabinet construction. Knowledge of refrigeration helpful but not necessary. Excellent opportunities for advancement. Give full details of experience and state salary desired. BOX 2324, Air Conditioning & Refrigeration News.

WANTED—EXPERIENCED air conditioning application engineer. Reputable western Pennsylvania firm, in business for many years and with complete installation and service facilities, has permanent position for qualified engineer. Write BOX 2338, Air Conditioning & Refrigeration News.

SALESMEN WANTED to sell nationally advertised line of Florist refrigerators and store equipment throughout East, Southeast, and Rocky Mountain territories. Refrigeration service men preferred—commission basis only. No inventory required on your part, shipments can go forward within 30 days after receipt of order. BOX 2339, Air Conditioning & Refrigeration News.

ASSISTANT TO factory superintendent in manufacturing of commercial refrigerator fixtures, cases, walk-ins, etc. by well known midwestern old firm. Must be capable of training personnel—have full knowledge and capable of handling production of wood and metal constructions. Write BOX 2342, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

MOTORS AND condensing units—available at once—⅛-¼-⅓-½ Universal condensing units with or without motors. Special—six hole ice-cream cabinets with ¼ hp. Copeland units less motors $225. Also beverage coolers, beer equipment, stainless steel reach-in freezers. ALBROD CORP., 319 West 48th St., New York City 19, CI 6-9100.

IMMEDIATE DELIVERY—new air conditioning equipment. Weathermakers complete with motor, "Freon" coil, etc. 2 ton to 25 ton. SWSI, DWDI, and twin centrifugal blowers, propeller fans, heating and cooling coils, evaporative condensers, self-contained air conditioning units, condensing units. CONTROLDTEMP CORP., 236 Butler St., Brooklyn 17, N. Y.

FOR SALE—AC motors ½ to 3 hp. single and 3 phase, list price. Immediate delivery. EDISON COOLING CORP., 310 E. 149th St., Bronx 51, N. Y

BEER DISPENSING equipment—direct draw systems, 3-4-6 keg capacity. Beverage coolers, beer dispensers for air-duct and Temprite systems. Beer pumps. Immediate deliveries. Dealers wanted for New Jersey, New York and Pennsylvania. EXCELSIOR MACHINE CO., 2601 Kutztown Road, Reading, Pa.

QUALITY BOBTAIL fountains; reach-ins, walk-in boxes—wood, metal; dough retarders; double duty cases—stainless steel, porcelain; dairy, florist, bakery cases; ice cream hardening cabinets; thermopane frozen food cases; milk, sandwich coolers; stainless steel back bars; with machines. Equipment made to special order. FRIGITEMP CORP., 931 Bergen St., Brooklyn 16. MA 2-9093.

IMMEDIATE DELIVERY on five 1 HP Z100F Servel air cooled condensing units. $295.00 each. GENERAL TRADING CO., Box 1000, Danville, Va.

1 HP MEAT AND bone cutter machines. Popular make complete with single phase motors. Brand new in original factory crates. Immediate delivery. HARRIS COMMERCIAL REFRIGERATION CO., 123 North Perry St., Attica, Ind.

AIR CONDITIONERS—3 Philco air cooled console models, ¾ HP 110 volts at $495.00 each. 2 Philco ½ HP $395.00 each. One reconditioned 7½ HP Fairbanks Morse compressor with 7 room coolers complete, $1250.00. Also new blowers, motors and compressors. J. HERMAN CO., 2410 S. Main St., Los Angeles 7, Calif.

THREE DIRECT draw beer bar cabinets with ⅓ HP hermetic "Freon" 12 units. 15 ft. long, 28" wide, 30" high, two tapping dispensaries, 4 keg storage. Top center for bottle cooling. Were Government excess stock used in U.S.O. camps. No. 1 shape. Price complete $650.00 each. F. LAUTENSLAGER MOTOR SERVICE, 850 Locust St., Columbia, Pa.

1000 MOTORS, FOR sale, from stock ⅜ hp.—3425 RPM—3 ph/230 V. (Underrated—easily equal to ¾ hp.) Ballbearing, for vertical or horizontal. Enclosed Fr. ¾ in. shaft. $36 each. This rugged motor cannot burn out. (Glass insulated wire coils.) MODERN SUPPLY CO., 206 Fulton St., New York 7—CO 7-0100.

NEW FRICK "Freon" condensing units, 3 phase, 60 cycle, 220 volt, water cooled. 3 HP @ $375.00; 5 HP @ $595.00. F.O.B. Charleston, W. Va. Quantity limited. If interested answer immediately. MOUNTAIN STATE DISTRIBUTORS, INC., 830 Pennsylvania Ave., Charleston 2, W. Va.

SECTIONAL WALK-IN coolers, kiln dried fir front, spruce interior. Chrome hardware, metal saddle, finished shellac 4 in. Fiber $1.20 for freezers 6 in. Fiber $1.40 per sq. ft. Cork insulation prices on request. Limited number new refrigeration units coils, etc. available. Send us your requirements. REFRIGERATION SPECIALTIES, INC., 721 Flushing Ave., Brooklyn 6, N. Y.

FLOAT REPLACEMENTS. For replacing defective high side floats on all household units. Regular charging connection, capillary tube setup, internal strainer and exact mounting plate. Part #2000-Westinghouse (4 hole plate), and #2010 (3 hole plate): Part #2020-Gibson Part #2030-General Electric (DR-1 & DR-2). Part #2040-For general replacement (undrilled plate). $6.75 each. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56.

SEALED CROSLEY TERMINALS. Installed from the outside in a few minutes without opening the compressor. Corrects leaky terminals on all Crosley "F-12" units. Set of three $6.75 (Part No. 1020). Installation tool $1.65. Immediate delivery. Money-back guarantee. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

10 HP SYSTEM complete: 2 Baker 32TA compressors, 2 G-E 5 HP motors; Governair EC-113F evaporative condenser, ½ HP Century motor, Baker receiver; Governair GUC-30 cold diffuser, 1½ HP Century motor; disconnect switches, magnetic starters, controls; 2-Jamison doors; 100# "Freon"; spare parts. R. P. TUCKER, 220 Blue Hills Ave., Hartford, Conn.

FAN BLADES—immediate delivery—Torrington B series, size 24"—30"—36"—48"—40 pitch, unpainted ¾" bore, all new in original containers. VALLEY FAN MFG. CO., Box 206, Fort Valley, Ga.

AVAILABLE AT factory cost. Universal, ⅛ HP, DD 33 FLI compressors less motors. Bundy, copper-coated steel tubing in 15' and 25' lengths, ½" O.D. .035 wall thickness. BOX 2336, Air Conditioning & Refrigeration News.

CUBE TRAYS, Aluminum—21 cube grids, 5¾ x 9¾ x 1⅝—49¢ each. 27 cube grids, 5¾ x 13⅛ x 1⅝—59¢ each. Snap-out trays, 4⅜ x 11⅛ x 1 13/16—98¢ each. 14 cube grids. Prices FOB shipper. BOX 2349, Air Conditioning & Refrigeration News.

FRANCHISES AVAILABLE

LOW COST automatic fire extinguisher. Exclusive county rights available for the Marvel automatic Kill-Fyr extinguisher. Component parts approved. Easy sales, good profits. Write for descriptive circular and facts from satisfied users. KILL-FYR MANUFACTURING CO., Dept. R-88, Camden, N. J.

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FOR SALE: Commercial and domestic sales and service near Los Angeles, City of $15,000—no competition—good franchises, consistent earning record. Good building in excellent location with good lease. Stock and fixtures $17,500.00. Reason for selling—other interests. BOX 2332, Air Conditioning & Refrigeration News.

FOR SALE—Going refrigeration and sales business in Southern California. Established over 10 years. Annual gross, $150,000. Sale includes 3 late-model service trucks, fully-equipped shop, electrical motor rewinding facilities, 2-line telephone, valuable franchises for commercial equipment sales, lease. Advertising in effect. $25,000, plus inventory. Address BOX 2340, Air Conditioning & Refrigeration News.

WORLD TRADE NEWS

Report from Mexico:

Demand Great for Refrigeration Equipment But Nation's Economic Troubles Limit Sales

Editor's Note: Following is the first of a series of on-the-spot field reports analyzing the market for refrigeration and air conditioning equipment in Latin America. These reports are written especially for the NEWS by Philip H. Berritt, of American Refrigeration Export Co., New York City, during his current tour of that area. Mr. Berritt's firm specializes in the promotion of export sales of refrigeration and air conditioning equipment produced by American manufacturers and represents a number of firms in the industry.

By Philip H. Berritt, American Refrigeration Export Co.

There is no shortage of commercial refrigeration equipment in either Monterrey or Mexico City. Visits to the showrooms of air conditioning and refrigeration distributors in the two important Mexican cities soon revealed this very apparent fact.

In Monterrey, adequate supplies were seen in the showrooms and warehouses of every distributor visited.

CONDENSING UNITS: On display were condensing units manufactured by some of our leading producers in the States, and in almost every instance they were complete with motors. All our manufacturers seem to be very well represented in Monterrey, and their respective distributors had enough units on hand; in some cases there was a surplus.

The greatest demand is for ¼, ⅓, and ½-hp. units. It was said that many distributors had written or wired the factories they represent to hold up further shipments until some of their present stocks could be unloaded.

DISPLAY CASES: Refrigeration display cases of various sizes, and manufactured by some of the most prominent American firms, were also displayed on many showroom floors and in warehouses. Almost without exception, these cases were all porcelain. The Mexican consumer seems to prefer porcelain above other finishes.

REACH-IN REFRIGERATORS: There was also an abundance of reach-in refrigerators, and again porcelain was favored. However, there were a few stainless steel reach-ins scattered about, as the public is beginning to appreciate some of the advantages of stainless steel.

FARM & HOME FREEZERS: This type of equipment has not yet caught on as it has in the States, and the only kind the Mexican distributor can move is a porcelain freezer completely streamlined. The cabinets that were not streamlined were not moving at all. General opinion is that if farm and home freezer manufacturers wish to sell their cabinets in Mexico, they will have to streamline them.

FROZEN FOOD DISPLAY CASES: Frozen foods have not yet reached this market and display cases can be seen in very few showrooms. It seems some distributors imported one or two—just to have them on their showroom floors and more or less acquaint prospective consumers with the fact that they are coming.

ICE CREAM CABINETS: Ice cream cabinets are in great demand, and they are starting to come into the market in greater numbers. However, they still are not received in sufficient quantities. Of all refrigeration equipment, ice cream cabinets appear to be the fastest selling.

AIR CONDITIONING EQUIPMENT: The demand for self-contained air conditioning units of all sizes is great. However, if American manufacturers wish to sell this equipment in Mexico, they should concentrate on manufacturing air-cooled units and NOT water-cooled units, because water is a scarce commodity in Mexico.

The situation in Mexico City appears to be almost identical with that in Monterrey. There is no scarcity of refrigeration equipment, although there is a great demand in both cities as well as in the other principal cities of the country.

However, it seems that people are not buying. The following reasons have been advanced by government sources and by agents and distributors in the two cities.

1. Silver, the biggest export item, is hardly being exported at all, chiefly because the United States, the biggest customer, stopped buying to a great extent. Most other countries to whom Mexico exported silver are not in a position to buy. One of the agents in Mexico City puts the silver situation this way:

"Since November, 1946, Wall Street in New York has lowered the price of silver. This has made it impossible for silver to be exported from Mexico. Therefore, most of the silver mines have been closed. As you know, silver has been one of the main sources of income in Mexico."

2. The cattle in Mexico are affected with a hoof and mouth disease. Naturally, the United States stopped importing Mexican cattle. So did Guatemala and other countries. Consequently, great numbers of cattle are being slain, which naturally results in a great loss of revenue.

3. The Mexican Government is taking steps to prevent inflation by demanding that banks deposit 50%, instead of between 10% and 30%, with the central bank. Therefore, banks have to stop granting credit except to the biggest firms.

Now, instead of having to give a bank nothing, or 10% to 30% depending upon the firm, importers must currently deposit 100% with the banks or have that amount deducted from their balances when opening a Letter of Credit.

All of these factors are limiting buying. Also, new import regulations require licenses for importing many products, including some refrigeration equipment.

Generally, the consumer is afraid to buy as the shortage of money is being felt, and the cost of living is still very high. Many commercial firms are afraid to order, believing that prices will suddenly drop. No one has the slightest idea if and when that may happen.

There is a commercial agreement between the United States and Mexico which is scheduled to expire in June. Most people are of the opinion that upon the termination of this agreement, the Mexican peso will fall. The present exchange of $4.85 to a dollar has been kept up by this agreement, but in reality the purchasing power of the peso has been very low for sometime now.

Our agent informed us that after a conversation with the manager of a leading American bank in Mexico City, he was advised to refrain from accepting orders unless they came from extremely reliable firms in Mexico. It was also said that some American firms had orders cancelled after their equipment reached Laredo, Texas, on the Mexican border, and that the American firms were having difficulty in disposing of the equipment.

Some of the best firms are slow in honoring their drafts because of a shortage of money which is tied up in inventory. Late shipments are being refused entirely. There is absolutely no question that there was a lot of "water" in most orders.

It is said, confidentially, that some of our manufacturers and their export agents are now demanding cash in advance, or a Letter of Credit, and are absolutely not making any more sight draft shipments. It is felt by most people here that the inventory can be disposed of very easily if the monetary situation were changed for the better, because there is a terrific demand throughout the country for refrigeration and air conditioning equipment.

American manufacturers should exercise caution in making shipments to Mexico and should know their customers well before making sight draft shipments.

DeLind Minimizes Mexican 'Depression'

CHICAGO—Economic disturbances in Mexico, viewed fearfully by some American businessmen, will have no serious affect on U. S. export trade, according to J. W. DeLind, Jr., president of Borg-Warner International Corp.

Mr. DeLind, who recently returned from a business tour of Mexico, said he saw no evidence of real depression. He believes, instead, that the Mexican business chart is undergoing a greatly needed correction.

"Mexican firms which frantically bought and placed orders when all merchandise was scarce, now find that their competitors similarly were ordering in huge quantities," Mr. DeLind pointed out. "If all the material they have ordered were actually to be delivered, they would be seriously over-stocked.

"For this reason some firms are refusing their commitments in the United States and are canceling orders—but generally for the purpose of being able to place new orders on a sounder basis. They are today better able to estimate the physical requirements of their markets," he reports.

Mr. DeLind believes that Mexico's soundest cushion against any real depression is the fact that within the last decade the portion of her population which can be considered the "consumer class" has risen from a mere 10% to approximately 25%.

Agency Official Says Mexico No Longer a 'Dumping Ground'

NEW YORK CITY—Many retailers in Mexico are now overstocked with radios, drugs, and cosmetics, Thomas M. Quinn, executive vice president of Irwin Vladimir & Co., Inc., advertising agency, reported after returning from a trip to that country. Manufacturers "can no longer look forward to using Mexico as a 'dumping ground,'" he said.

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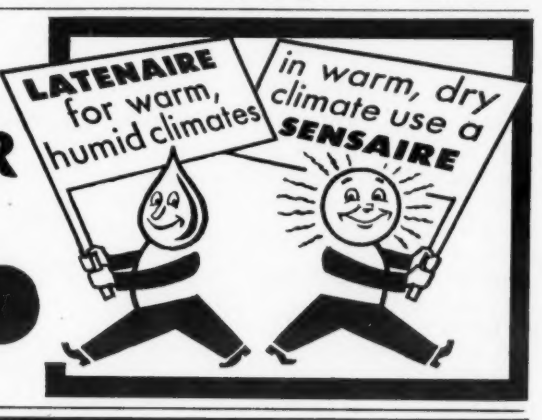

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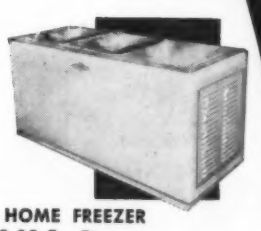

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G-E Prices--

(Concluded from Page 1, Column 5)

union by General Motors and Westinghouse.

General Electric agreed to increase wages 11½ cents for hourly-rated employes. The remaining 3½ cents covers six paid holidays and three week's vacation after 20 years of service.

Cost of the pay raises was estimated by G-E at more than $50,000,000. Albert J. Fitzgerald, union president, figured the increases would cost G-E in excess of $40,000,000 yearly.

Models affected by the price changes and the old and new prices follow:

HOUSEHOLD REFRIGERATORS

Model	Old Price	New Price
NC 6	$179.75	$189.75
NB 8	199.75	224.75
NC 8	229.75	259.75
ND 8	259.75	299.75

HOME FREEZER

Model	Old Price	New Price
NA 8	$299.75	$329.75

RANGES

Model	Old Price	New Price
AP 1	$139.75	$149.75
CT 1	169.75	189.75
CD 1	229.75	259.75
DD 1	314.75	334.75

DISHWASHERS

Model	Old Price	New Price
DE 646	$299.50	$339.50
BE 646	224.50	244.50
AE 646	209.50	224.50

WATER HEATERS

Model	Old Price	New Price
EG 15-1	$ 84.75	$ 94.75
EG 30-1	104.75	114.75
EG 30-2	114.75	124.75
EG 30-7	114.75	124.75
EG 40-2	124.75	134.75
EG 52-1	124.75	139.75
EG 52-2	134.75	149.75
EG 66-1	139.75	154.75
EG 66-2	149.75	164.75
EG 82-1	164.75	179.75
EG 82-2	174.75	189.75
EM 30-2	179.75	199.75
EM 40-2	209.75	229.75
EM 50-2	269.75	299.75
EM 80-2	339.75	379.75

Note: Heaters in the EG series have copper bearing steel tanks, while those in the EM series have monel metal tanks.

NEWA Meeting--

(Concluded from Page 1, Column 2)

ing committee and the rural markets committee. A talk on "Electrical Interdependence" by Herbert Metz, chairman of NEWA's planning committee, and a report by E. B. Ingraham, chairman of the appliance division, are other features.

On Tuesday, the appliance division will hear reports of functional and commodity committees and hold elections. Elections also are to be held the same day by the apparatus and supply division.

A cocktail party and the annual banquet are scheduled for Tuesday evening. Music and entertainment have been arranged.

Part of Wednesday morning will be taken up by meetings for all NEWA zones to elect members of the board of governors. Later, a general business session will be held during which members will consider changes to the association's by-laws and suggested revisions of trade practice rules.

After a noon luncheon and organization meeting for newly elected board members, the apparatus and supply division will sponsor the afternoon general session. Mr. Edward's address is to be preceded by a report from Mr. Salsbury, speaking as chairman of the apparatus and supply division.

General sessions Thursday, again sponsored by the apparatus and supply division, will wind up the convention. Reports of commodity committees and other business will occupy these sessions.

New York Quick Freezing Plant Goes Bankrupt

BROCKPORT, N. Y.—With an inventory of approximately $1.5 million of frozen and canned foods on hand, a quick freezing plant here has gone into bankruptcy.

Failure of the company was attributed to its inability to sell its stock because of a glutted market. It is reported that chain stores in the Rochester area are buying up the goods at as little as one third of its original price.

Twelve ounce packages of plums, which a year ago retailed for 35 cents, were being sold for 5 cents; pints of frozen orange juice were selling for 10 cents instead of 25 cents as they were a year ago.

Hotpoint Prices--

(Concluded from Page 1, Column 2)

Two new models of the wringer-type washer (LWP5 and LW5) are priced at $144.75 and $134.75, this source reported. He said no price had as yet been received on the automatic washer.

Prior to the price raises, officials pointed out that prices of the company's electric ranges, dishwashers, refrigerators, and water heaters have gone up an average of 20% over 1941 thus far. They said all production costs were being reviewed carefully to hold the increases to the lowest amount possible.

Former and current prices follow:

HOUSEHOLD REFRIGERATORS

Model	Old Price	New Price
EA 6	$179.75	$189.75
EA 8	199.75	224.75
EB 8	229.75	259.75
EC 8	269.75	299.75
EC 10	299.75	349.75

HOME FREEZER

Model	Old Price	New Price
EK 8	$299.75	$329.75

RANGES

Model	Old Price	New Price
108RB29	$139.75	$149.75
109RB27	169.75	189.75
109RB28	229.75	259.75
109RC10	314.75	334.75

DISHWASHERS

Model	Old Price	New Price
10MC1	$249.50	$279.50
10MC2	229.50	259.50
10MD1 (w/ sink & disposal)	454.00	474.00
10MC3 (washer & sink)	329.50	349.50

WATER HEATERS

Model	Old Price	New Price
100WB11	$ 84.75	$ 94.75
100WB15	*	99.75
100WB31	*	114.75
100WB32	114.75	124.75
100WB33	*	124.75
100WB41	*	124.75
100WB42	124.75	134.75
100WB51	*	139.75
100WB52	134.75	149.75
100WB61	*	154.75
100WB62	149.75	164.75
100WB81	*	179.75
100WB82	174.75	189.75
100WE31	*	189.75
100WE32	*	199.75
100WE41	*	219.75
100WE42	*	229.75
100WE51	*	289.75
100WE52	*	299.75
100WE81	*	369.75
100WE82	*	379.75

*These prices not immediately available.

Note: Series 100WB water heaters have galvanized tanks. Series 100WE heaters have monel metal tanks.

$5 Million of Detrola Bonds Purchased by Equitable Life

DETROIT — C. Russell Feldmann, president of International Detrola Corp., announced May 1 that the company has issued and sold $5,000,000 of 3½% 15-year debentures to The Equitable Life Assurance Society of the United States.

Proceeds will be used to retire existing bank loans.

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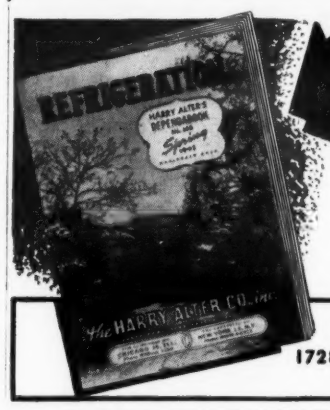
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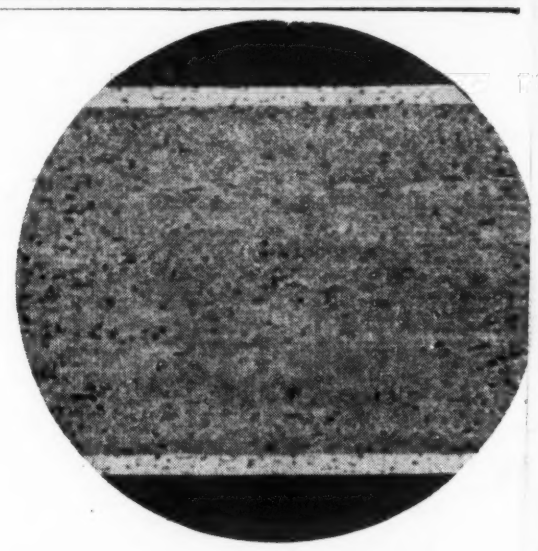
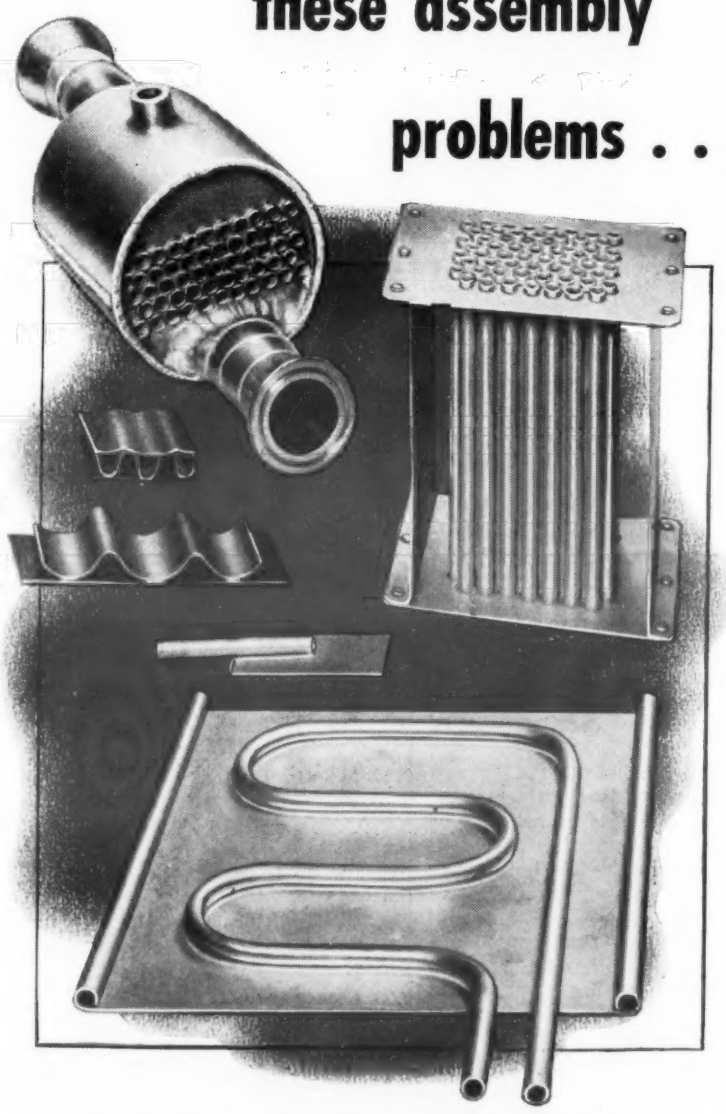
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